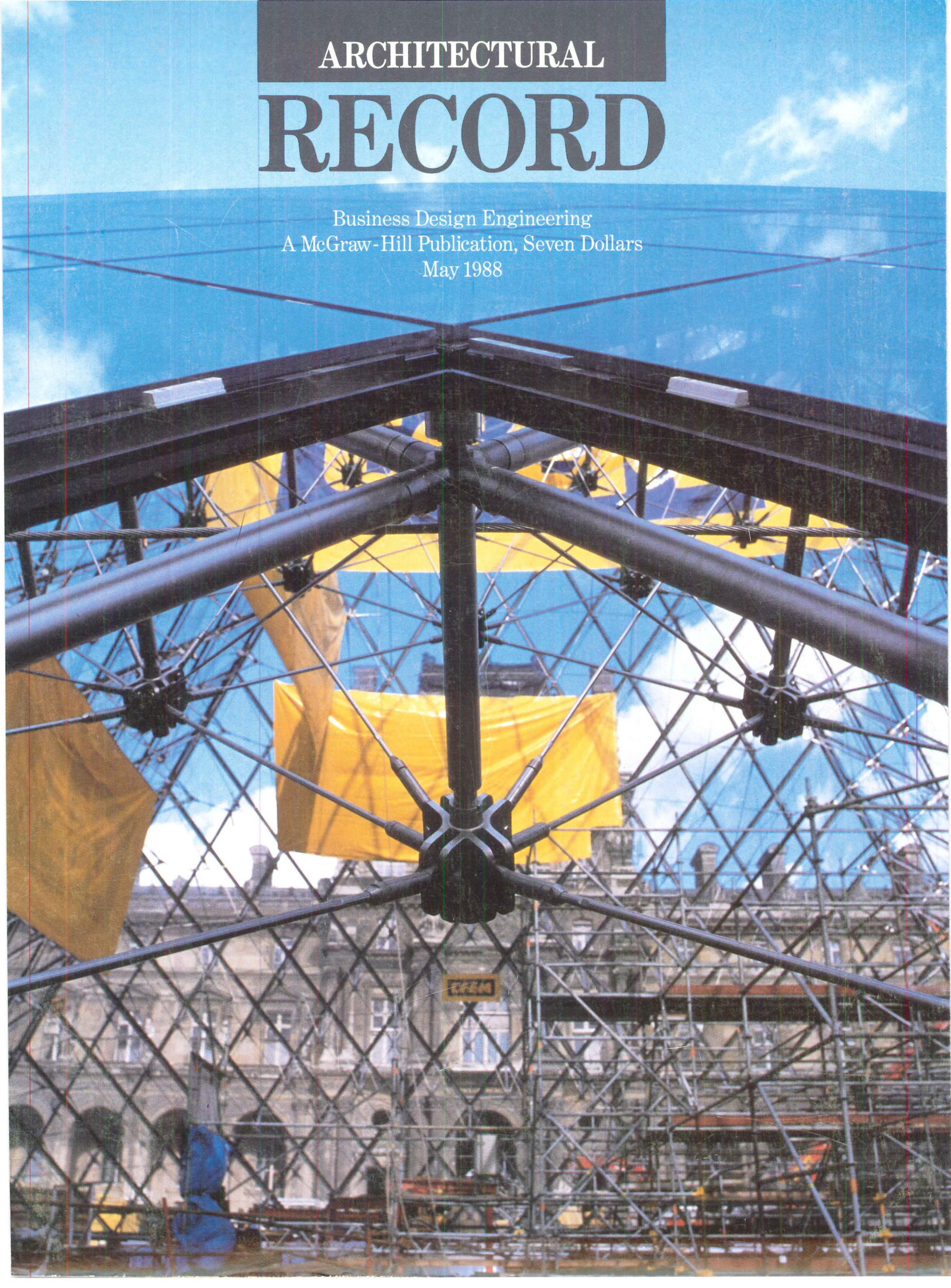
ARCHITECTURAL RECORD

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May 1988



Don't select a ceiling.







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Design one.



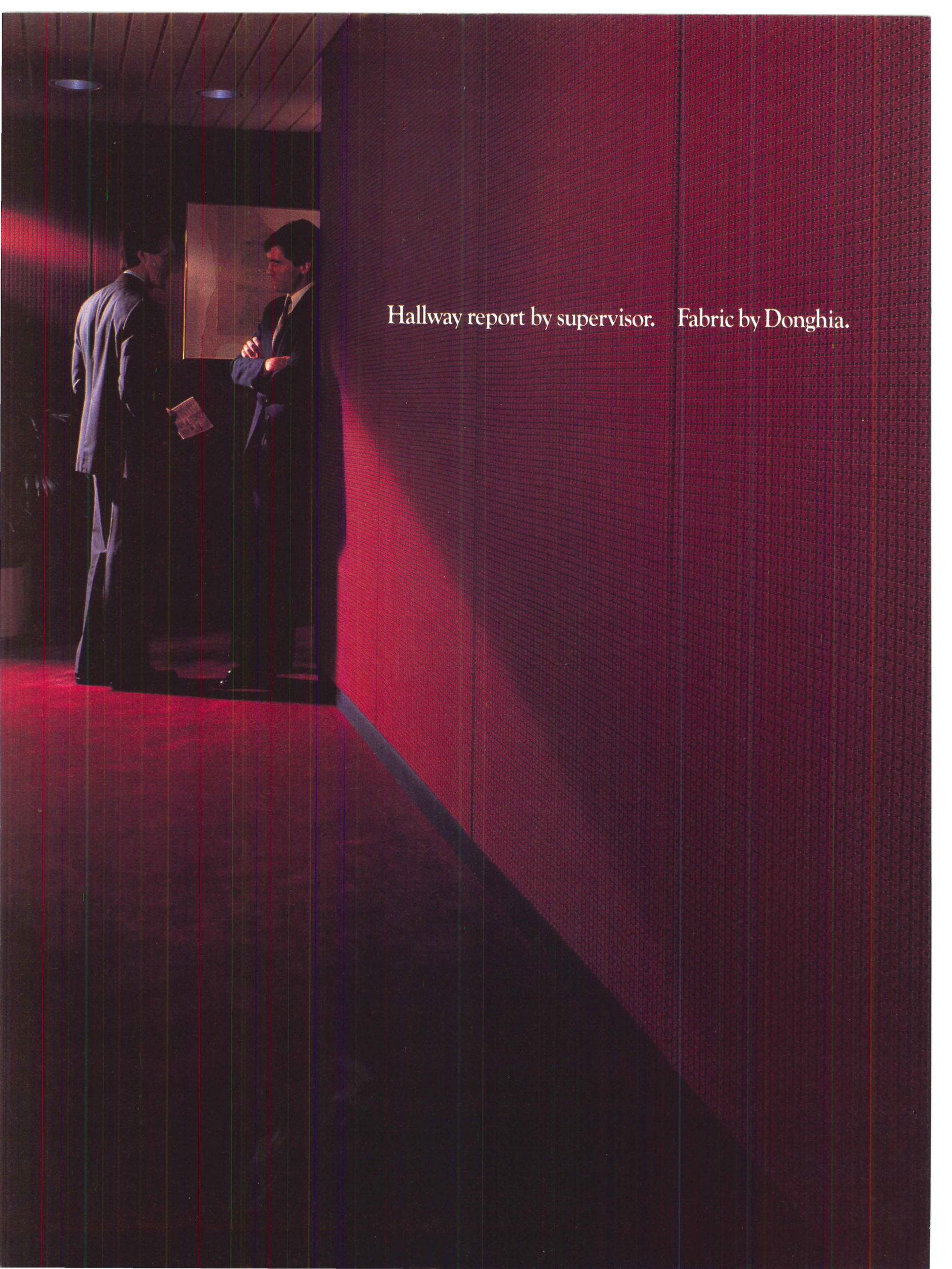
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Letters

I write to congratulate you for the new awards program, "In the Public Interest" [ARCHITECTURAL RECORD, March 1988, page 9]. That you have chosen housing as the initial focus for this program suggests just how much of a contribution this undertaking can make toward encouraging and rewarding architecture committed to the public interest.

We are so used to thinking about architecture as a process performed by individuals in the service of other individuals that the social and environmental *context* can all too easily be assigned a backseat. The umbrella of *public interest* forces us to think about context and community. Architects as well as private developers, government agencies, private/public development consortiums, and community design centers who labor in these fields need to be recognized and encouraged to put their resources at the service of the community. This has always been true, but in the shadow of increasing homelessness and unaffordable housing, what was merely true is now imperative.

In rising to the challenge of serving the public interest, we may all become better citizens in the fundamental sense of that word. We may also have a better-quality environment for our pains and a greater public understanding that design must be at the center, not the periphery, of community life.
Raymond P. Rhinehart
Vice President
The American Architectural Foundation
Washington, D. C.

It is a delight to share the vision of someone like Lebbeus Woods [ARCHITECTURAL RECORD, February 1988, page 80 et seq.]. It is sad, however, to realize that late 20th-century America is unable to provide a genuine forum for the full expression of the stylistic dreams of the truly creative spirits among us.

Paolo Soleri, you recall, retreated in the 1950s to his desert monastery to give full vent to his poetic vision. Only a fragment of his output ever reached us beyond paper. Where Woods and Soleri are similar is that both designed for a clientele not yet striding the earth.
Samuel M. Thomas, Architect
Billings, Montana

May I thank you for your splendid piece on our building [ARCHITECTURAL RECORD, January 1988, pages 62-73] . . . . As you pointed out, such an achievement is the consequence of the interaction between architect and client.

There is a lot of emotional commitment in this building, from that of Kallmann, McKinnell and Wood right on down to the stone setters and carpenters. People of long experience with the New Jersey construction industry were astounded by the craftsmanship called for by an aspiring design.
Wilson Nolen
Corporate Vice President
Becton Dickinson and Company
Franklin Lakes, New Jersey

Corrections

In the story on Rowes Wharf in Boston (ARCHITECTURAL RECORD, March 1988, pages 86-93), the firm of de Harak & Poulin Associates, Inc., should have received credit as designers of architectural graphics and signage. In the same story, credit for the general contractor should have been given to Beacon/O'Connell, a joint venture of Beacon Construction Company, Inc., and Daniel O'Connell's Sons, Inc.

Cassandra Wilday should have received credit for the landscape design of Fire Station Five in Columbus, Indiana (RECORD, February 1988, pages 122-125).

Calendar

Through June 7
Design for Independent Living, an exhibition of products for the aging and physically disabled; at the Museum of Modern Art, New York City.
Through June 26
The Art That Is Life: The Arts and Crafts Movement in America, 1875-1920, a major exhibition at the Cooper-Hewitt Museum, New York City.
Through August 31
A retrospective exhibit of the community and retail planning developments of James W. Rouse; at the National Building Museum, Washington, D. C.
May 12 through September 4
Architectural Art: Affirming the Design Relationship, an exhibit organized jointly by the American Craft Museum and the New York Chapter, AIA, to explore the relationship of artist and architect; at the American Craft Museum, New York City.
May 23-25
"Energy—An Integrated Approach," a conference sponsored by the Tennessee Valley Authority and cosponsored by, among others, the AIA, the Association of Energy Engineers, and the Building Owners and Managers Association International; in Chattanooga, Tenn. For information: Susan Ross, TVA, 3S 65D Signal Place, Chattanooga, Tenn. 37402-2801 (615/751-7405).
June 6-8
"The New Designer," a conference on computer graphics for design, sponsored by the Pratt Center for Computer Graphics in Design; at the Grand Hyatt, New York City. For information: Pratt Center for Computer Graphics in Design, 45 Stephenson Terrace, Briarcliff Manor, N. Y. (914/741-2850).
June 12-17
"The Cutting Edge," the 1988 International Design Conference in Aspen. For information: IDCA, P. O. Box 664, Aspen, Colo. 81612 (303/925-2257).

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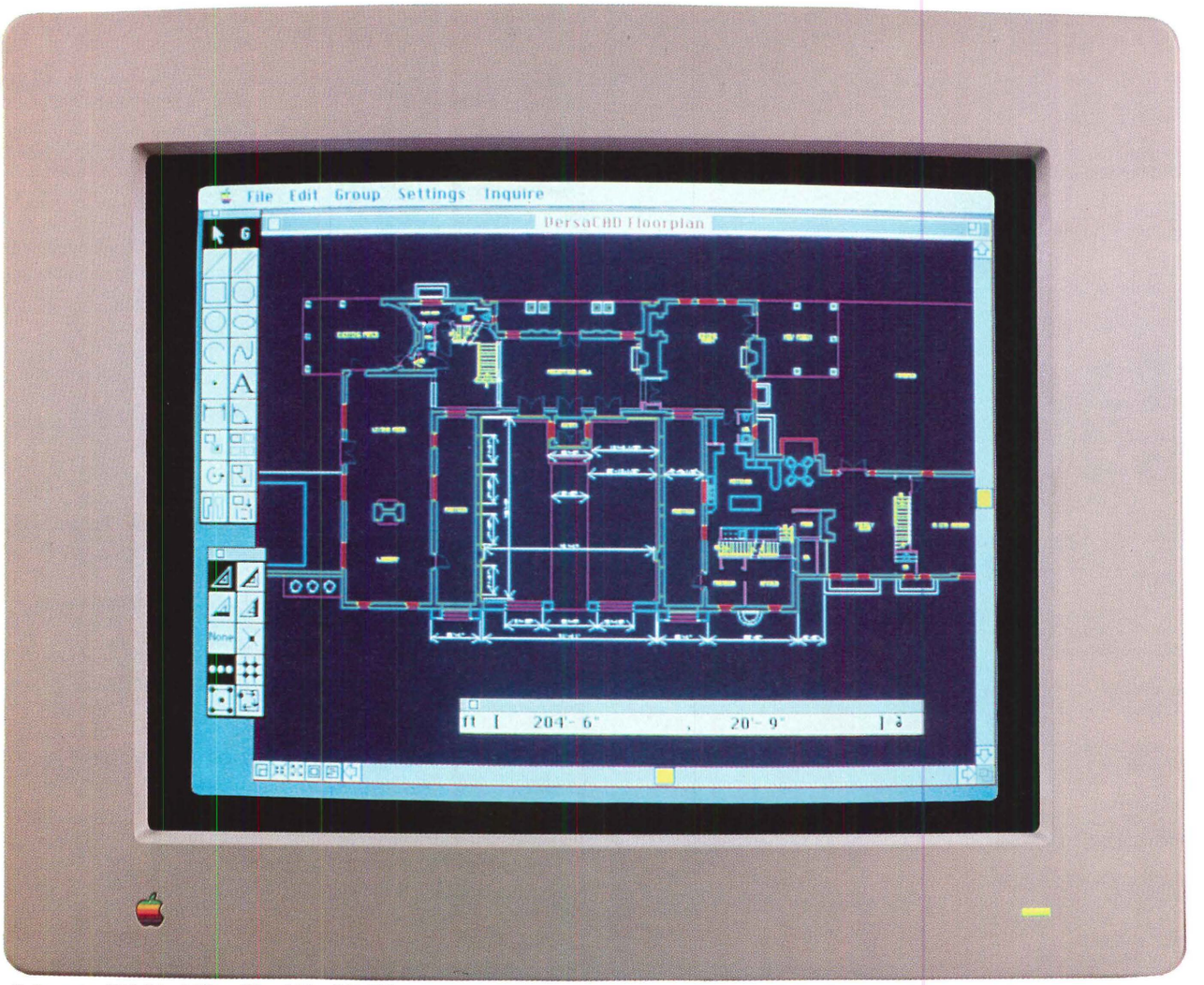
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The Grand Louvre, Paris, France
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The Standard.



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Looking forward to Ted Pappas

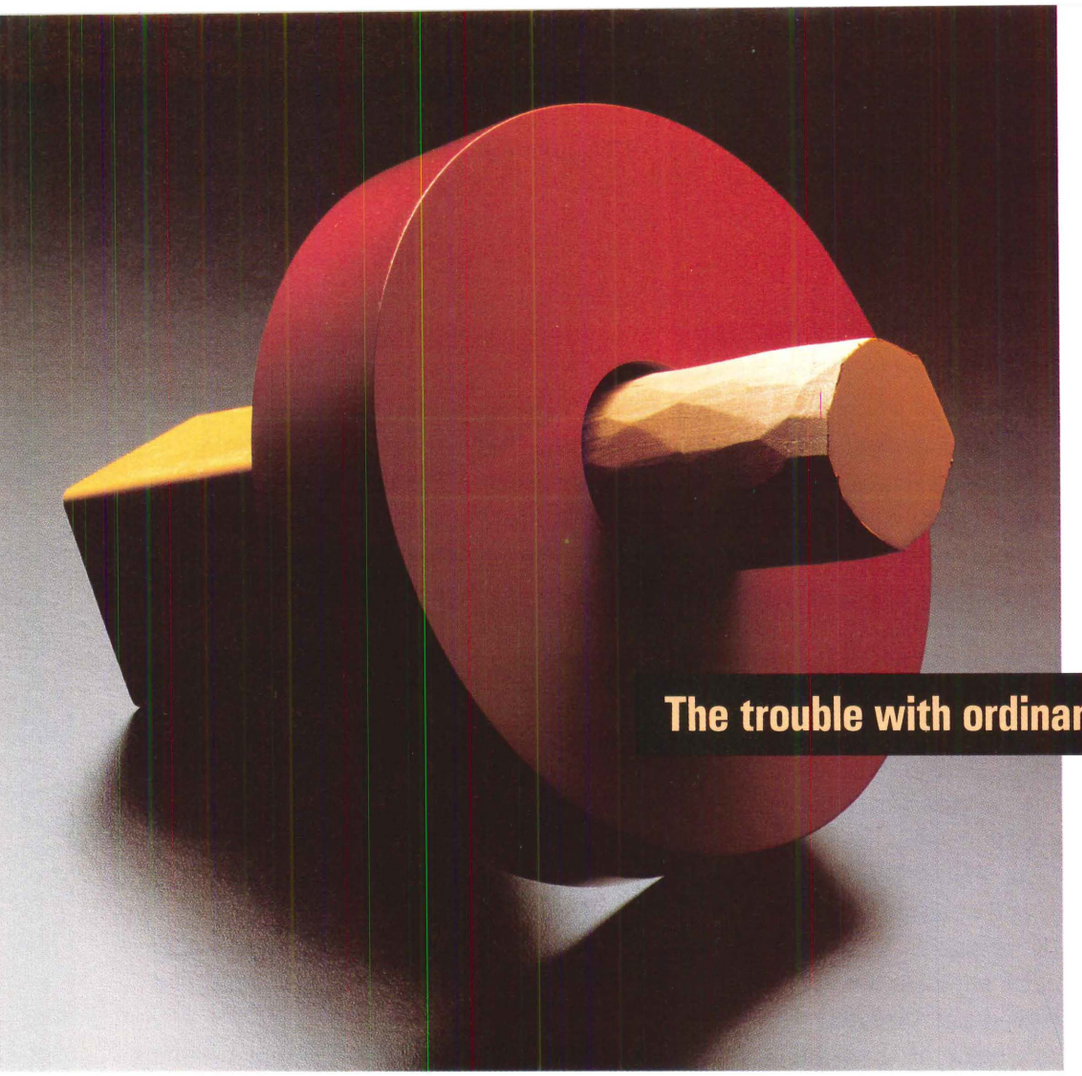
It has long been an annual custom for RECORD to host a lunch in honor of the current president of the AIA, an occasion for a speech by the incumbent that sets forth the goals he hopes to achieve, support, or at least get under way during his year in office. Architect Ted P. Pappas's address was eagerly awaited because he brings to the president's job something more than his achievement as head of a successful medium-sized firm, located in Jacksonville, which designs commercial, institutional, educational, and housing facilities. He also brings to the AIA's top post experience other than what he has learned from his generous and diligent gift of time to Institute activity at all levels.

Ted long ago began to practice what now, as AIA president, he preaches. He has been what he calls a "citizen architect," actively involved in the life of his city and region. His service has included 10 years as chairman of Florida's Capitol Center Planning Commission, and membership in the Jacksonville Historic Landmarks Commission, Visual Pollution Committee, and various local organizations devoted to the study and support of recreational and cultural activities. Thus his call for greater participation by architects in local community affairs is not just a replay of familiar AIA rhetoric, but is rooted in personal discovery of the effectiveness of well conceived and directed activism.

What are some of the issues the citizen architect must address? Pappas frames today's environmental problems in ways that look like opportunities. For instance, he urges that, instead of trying to discover what is an acceptable level of pollution indoors, more architects seek to define better environments for productivity and worker satisfaction. He hopes that, instead of letting the marketplace be the major determinant of land use, more architects join their fellow citizens in demanding that a community value be placed upon open space and more rational ways of developing cities and satellite towns. Why, he asks, can't architects bring their expertise to improving the transportation infrastructure, and finding ways of providing more middle- and low-income housing?

Pappas brought us up to date on the AIA's newest effort, a multiyear program called "Vision 2000." Its goal is to take a hard look at the forces that will shape architecture and the practice of architecture in the early years of the 21st century. The AIA hopes to help architects and all the members of the design and building team to prepare for the challenges ahead while exploring new ways to better serve the needs of today's evolving society.

Throughout his talk Pappas kept saying "us" and "we" and "our," thereby expressing his belief that the goals now being set by the Institute call for the collaboration of the entire construction industry. "I mean," said he, "architects, engineers, builders, contractors, manufacturers, unions, interior designers, even magazines and trade publications. We share the same fate. There are too many challenges not to collaborate. Too many potential dangers ahead. There's a world to shape, a future to mold." A call for collaboration as sweeping as this is rarely heard and should be carefully attended to. Pappas deserves to be taken seriously. The AIA is lucky to have him as president. *Mildred F. Schmertz*



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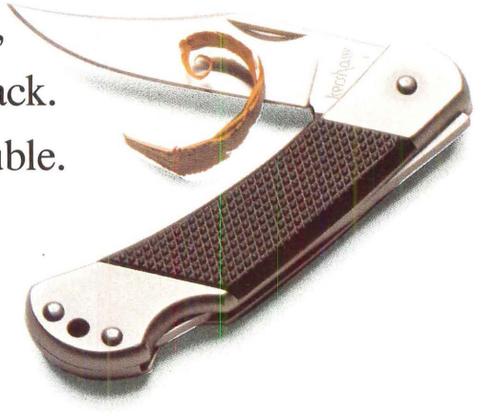
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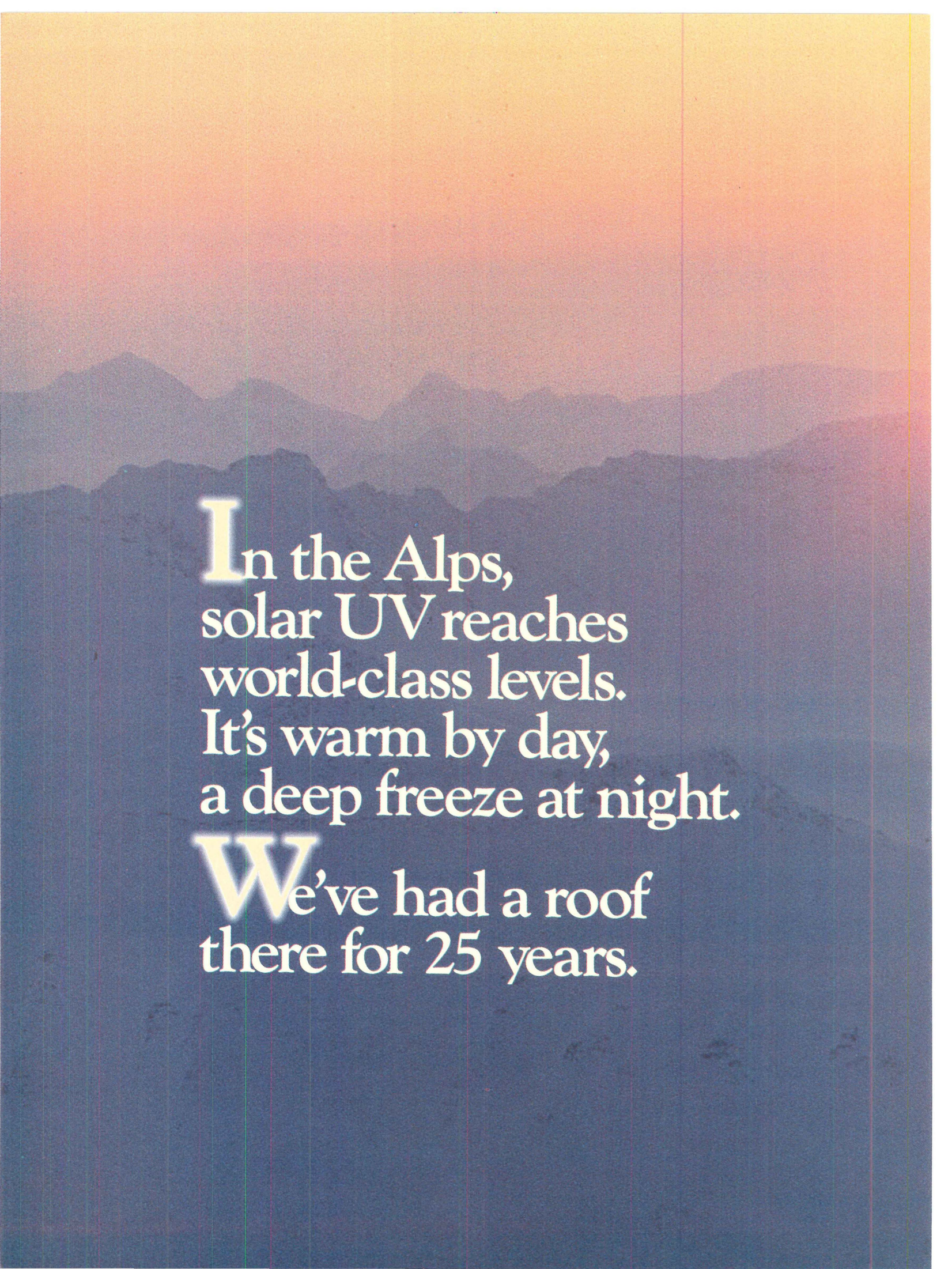
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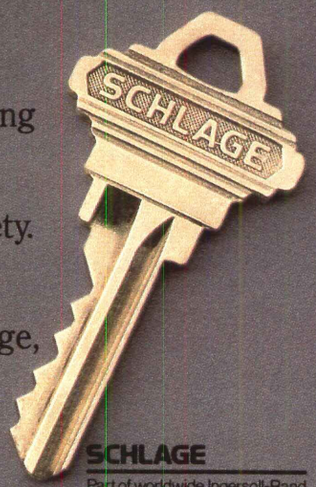
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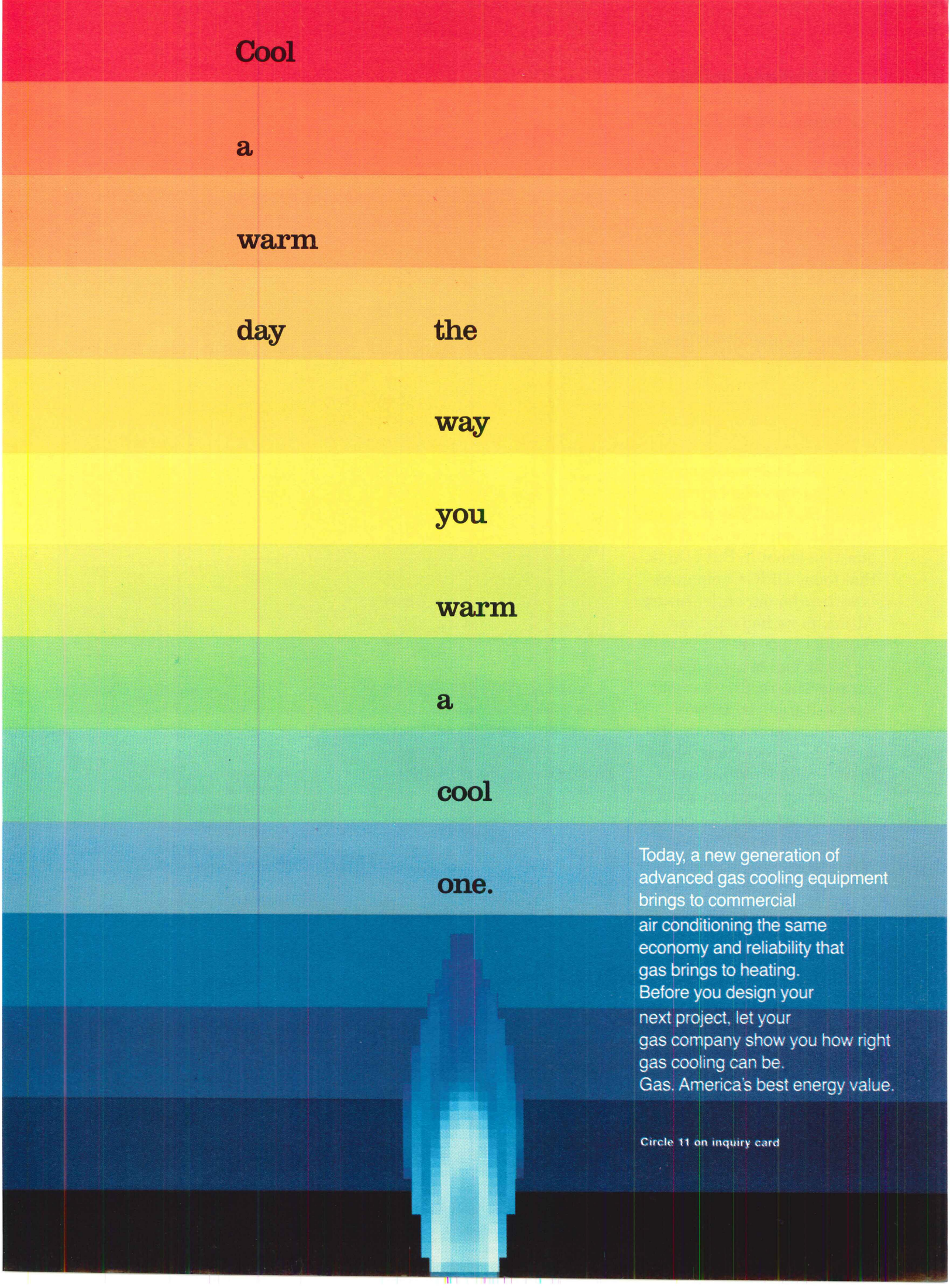
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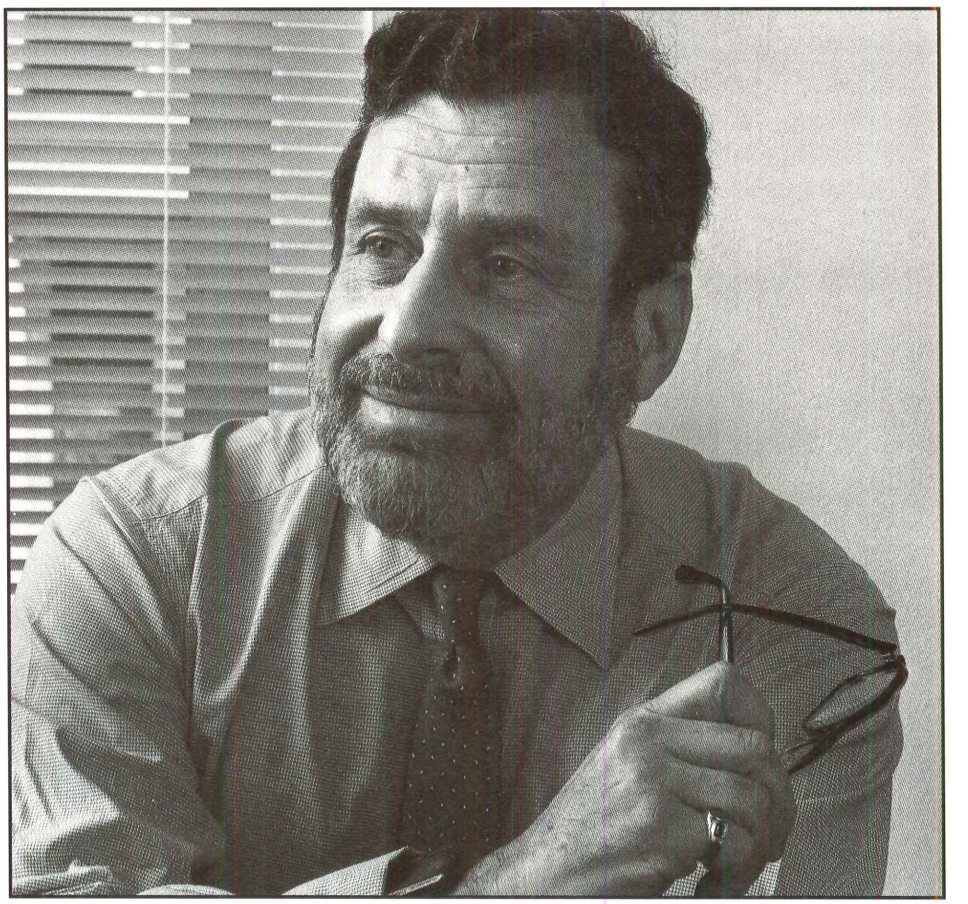
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Martin David Dubin

Dave Dubin is a principal in Dubin, Dubin and Moutoussamy, a 75-year-old architectural firm based in Chicago. He is past president of both the Chicago and Illinois AIA. We value our relationship with his firm and thank him for his willingness to talk to you about us.

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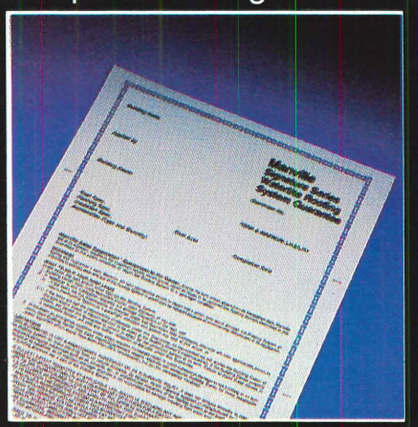
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A LOT ABOUT A ROOF
BY HOW ITS OWNER
FEELS ABOUT
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A MANVILLE ROOF GUARANTEES YOU'LL APPRECIATE EVEN THE WORST WEATHER.

A better roof means a better guarantee. And Manville offers the best backing in built-up roofing.

For 130 years, Manville has been manufacturing roofs that let building owners laugh at the weather. Our built-up roofing still represents the best in durable, trouble-free protection against the elements.

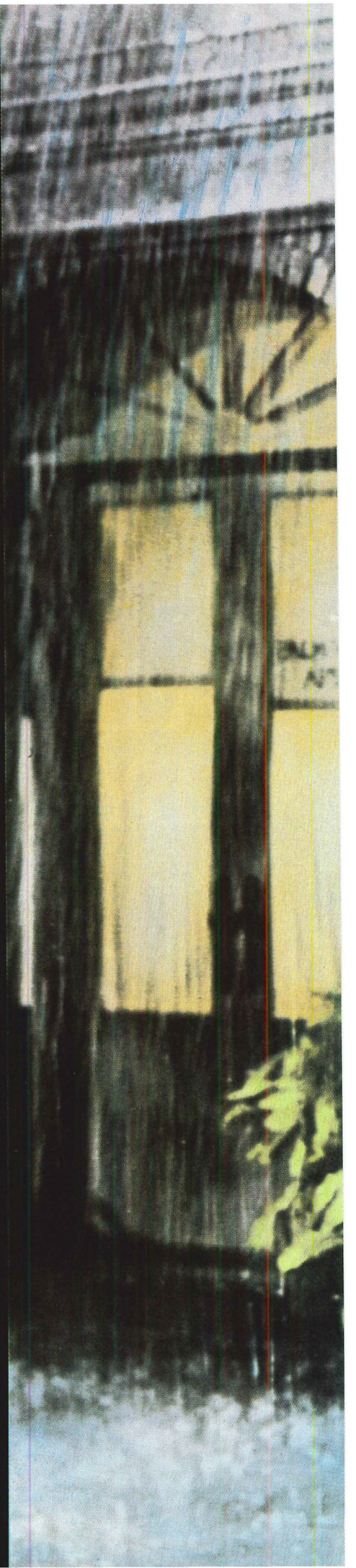


But the roof itself is only part of the story. In addition to the high quality roofing felts, asphalts, and insulation, Manville also provides a full line of engineered accessories designed to fit your roofing needs. Plus, the most comprehensive systems guarantee program in the industry.

And the Manville Approved Roofing Contractor program assures you of a knowledgeable, experienced, approved installer who works directly with your Manville sales representative and district engineer to get your job done right the first time. He's the best there is.

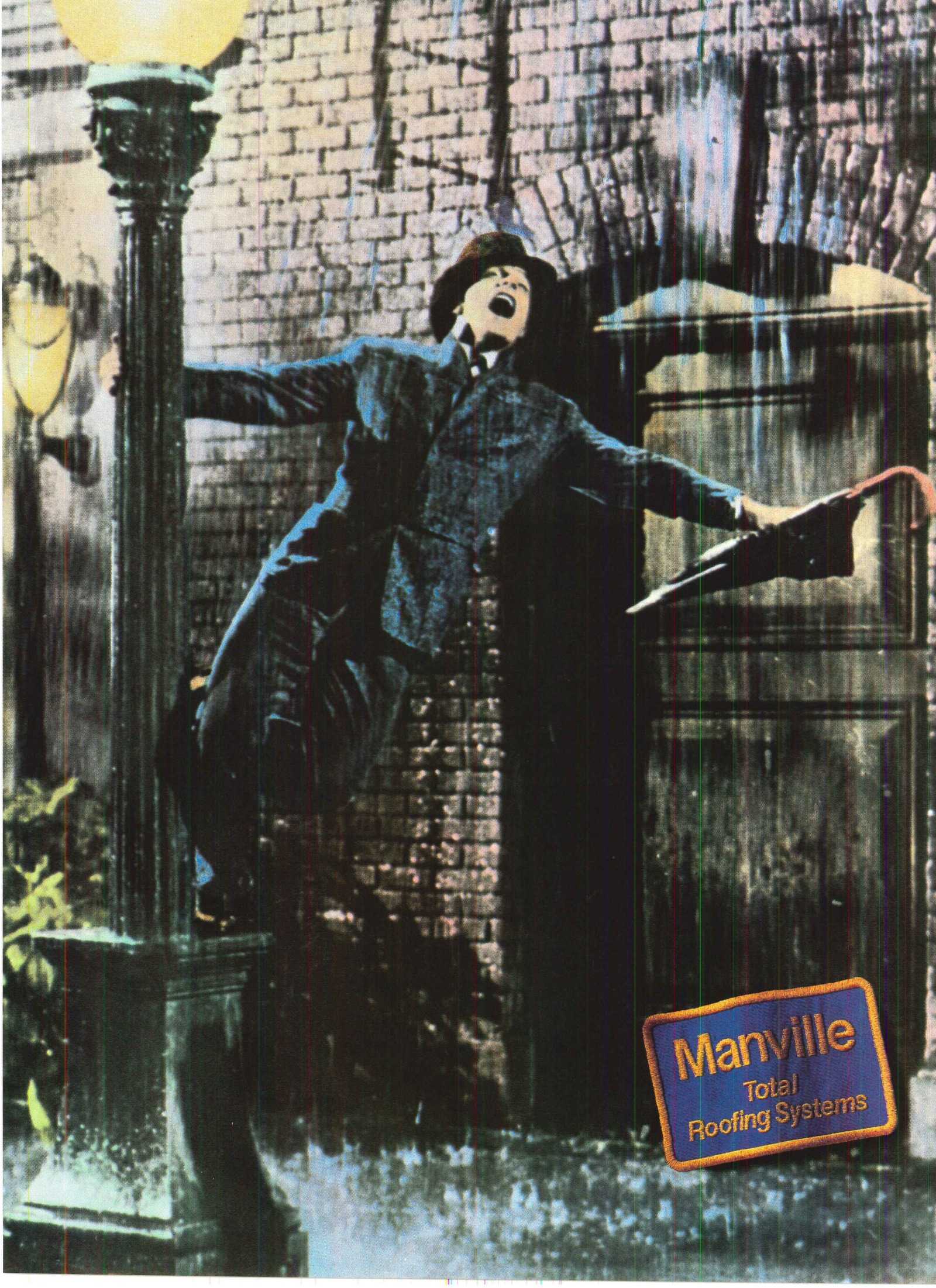
Better materials, better specifications, Manville approved contractors, and the best guarantee in the industry. Everything it takes to make building owners smile at even the worst weather.

For more information on our roofing systems, see your Manville sales representative, or contact Manville, P.O. Box 5108, Denver, Colorado 80217-5108.



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Manville
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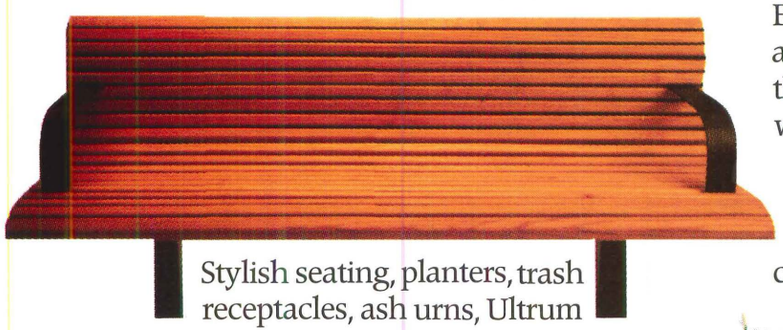
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With Ultrum it's easy to create a lasting impression.

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That's why you see Raynor Tri-Core doors on it. Every Raynor Tri-Core comes with a unique, three-inch thick insulated core of polystyrene that retains its insulating properties over time. A patented mechanically interlocked thermal break for maximum thermal performance. And perimeter seals to reduce air infiltration. It's as close as you can come to keeping the weather just like Spring on the inside. No matter what the weather is like on the outside.

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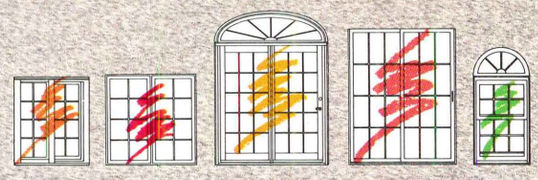
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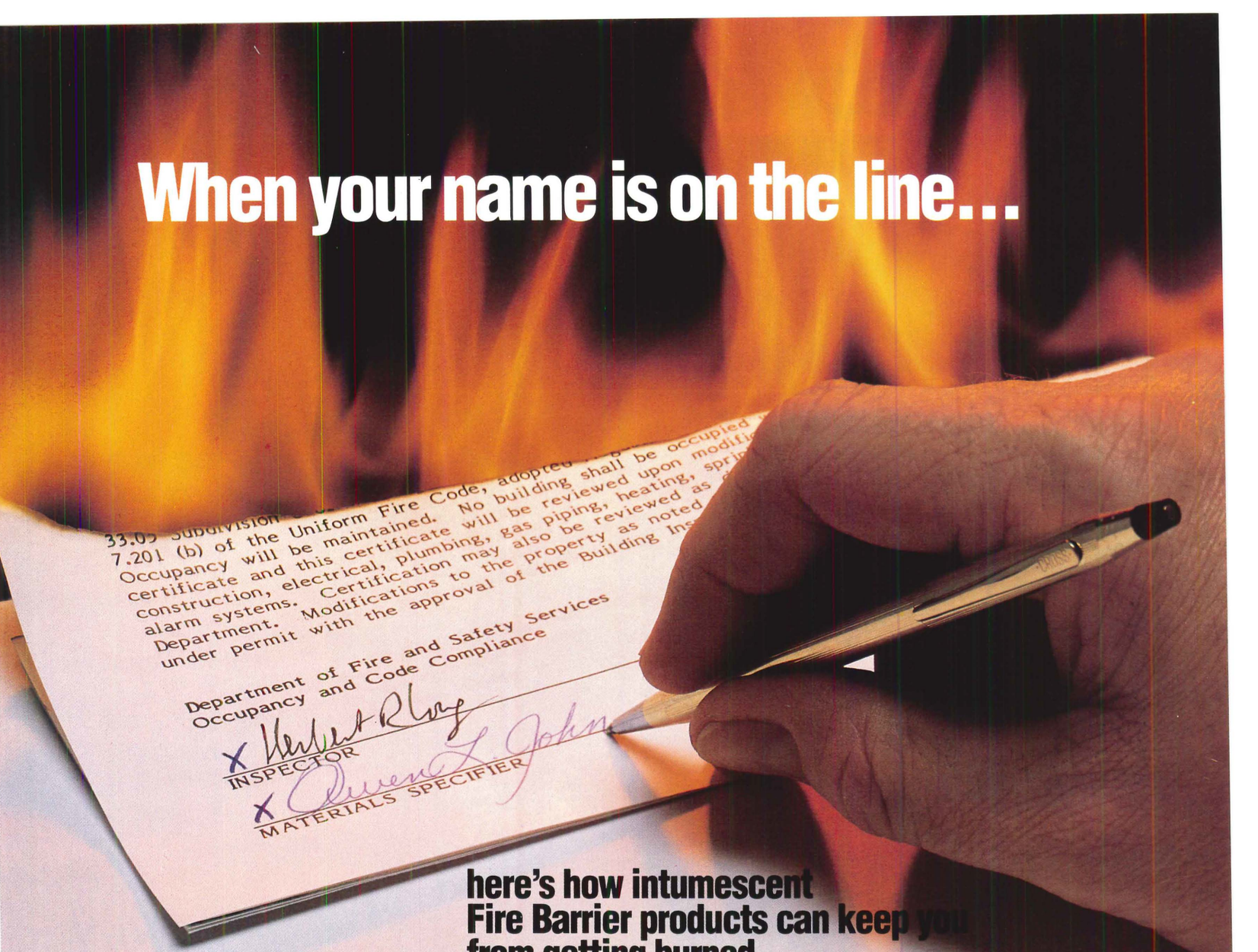
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here's how intumescent Fire Barrier products can keep you from getting burned

Weighty responsibilities come with your signature. Responsibilities to yourself and your reputation–and for the safety and well-being of building occupants.

With the industry's broadest range of UL Fire-Stop Classifications, 3M Brand Fire Barrier products can make a big difference in protecting life, property–and your reputation. Which is why you should always insist on 3M materials for fire and smoke seal cable trays, conduit, and metal, insulated, or plastic pipes.

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Expanding up to 10 times original volume when exposed to heat or flame, intumescent Fire Barrier products form a high strength insulating char that retains fire wall/floor integrity by filling any voids left by materials consumed in the fire.

As applied, they restrict the spread of smoke, toxic gas and water.



Intumescent Fire Barrier products are the only practical UL Classified method for fire-stopping plastic pipe penetrations.

You can reduce installed cost because often just one-half inch of Fire Barrier Caulk meets ASTM, Model Building Codes, Factory Mutual and UL 2-hour requirements. And one inch of Caulk or a single composite sheet meets 3-hour requirements

Send for your free booklet, "Questions and Answers about Fire-Stops," and complete 3M Brand Fire Barrier product specification approvals Write: 3M Fire Protection Products, 223-4N-06, 3M Center, St. Paul, MN 55144-1000.



3M

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But Owens-Corning can help you avoid the problems a leaky roof can cause.

We start by advising you about the best roofing system for your building.

We make the highest quality materials. And as the largest roofing manufacturer, we have a system to fit every budget.

We have a network of certified roofing contractors, and independent auditors to make sure the roof is installed correctly.

And to back all this up, Owens-Corning offers the best guarantees and warranties in the industry—up to 20 years on materials and installation. If repairs are needed, we'll pay all authorized costs—including labor.

So don't wait for your roof to leak, call us today at the number above. Or write C.E.Z. Meeks, Owens-Corning Fiberglas, Fiberglas Tower, Toledo, Ohio 43659.

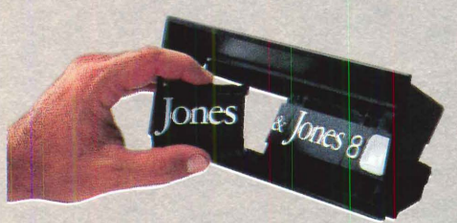
OWENS/CORNING FIBERGLAS

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Only Dover Ele with the

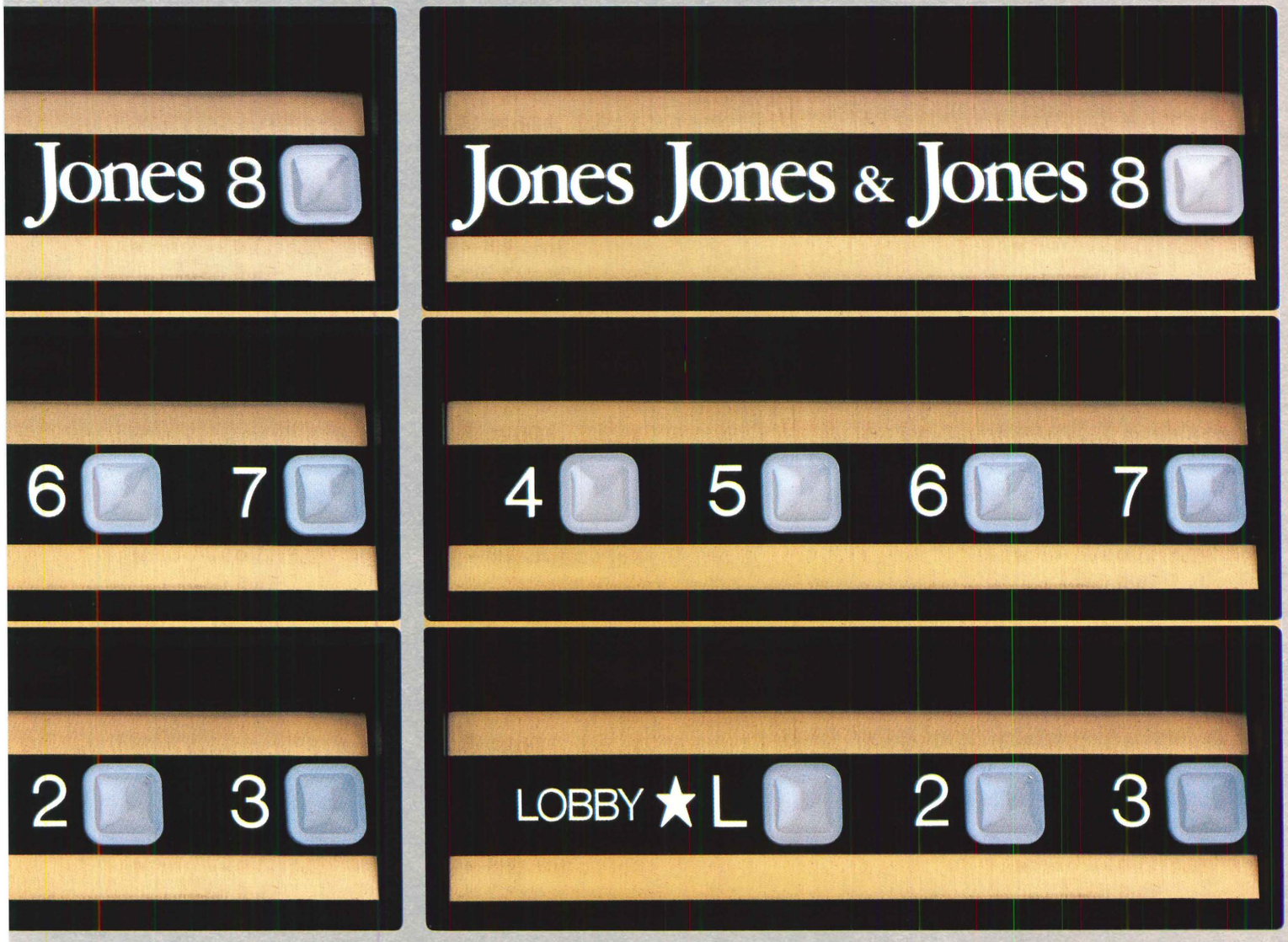




In a changing world, count on Dover to keep you current. With an innovative and flexible approach to elevator signal fixtures—Impulse.

Impulse® is the first system that lets you integrate signage directly into the cab operating panel. So tenants' names (or any other kind of ID) can be right there by the button. Even better, it's completely modular. You can add to, delete, re-arrange elements as needed.

vator keeps up Joneses.



Signage and buttons are recessed at a 20° angle facing up, so they're easy to read, easy to use.

Since it's pre-engineered, Impulse can be assembled and delivered quickly. Which can be important when you're keeping up with the Joneses.

For more information on Impulse signal fixtures, call your local Dover office or write Dover Elevator Systems, Inc., P.O. Box 2177, Memphis, TN 38101.

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ELEVATORS

Making more elevators makes Dover No.1

Stanley makes grand entrance at The Crescent in Dallas.

There's a new landmark gracing the Dallas skyline. One that celebrates three centuries of art, architecture and history. In a city of steel girders covered with mirrored glass, it makes a unique statement. Yet, it's the epitomy of Texas style, grace and culture.

The creation of The Crescent was a monumental task. It utilized the world's best minds, methods and materials, often in record numbers.

Started in the early 1980s, this 10.5-acre project was developed by The Crescent, a joint venture then composed of a Rosewood Properties subsidiary and Phillip W. Shepherd. This 1.6-million-square-foot office, hotel and retail complex was designed by John Burgee Architects with Philip Johnson in association with Shepherd & Partners. The unique design is a renaissance of 19th Century Texas and old world French architecture.

The exterior of The Crescent is made of 180,000 cubic feet of limestone—the largest use of limestone since the Empire State Building. Its six million dollars worth of ornamental metal, with 7,700 lineal feet of handrail alone, is the largest use in the world. The mansard roof is a mosaic of more than 250,000 slate tiles imported from England.

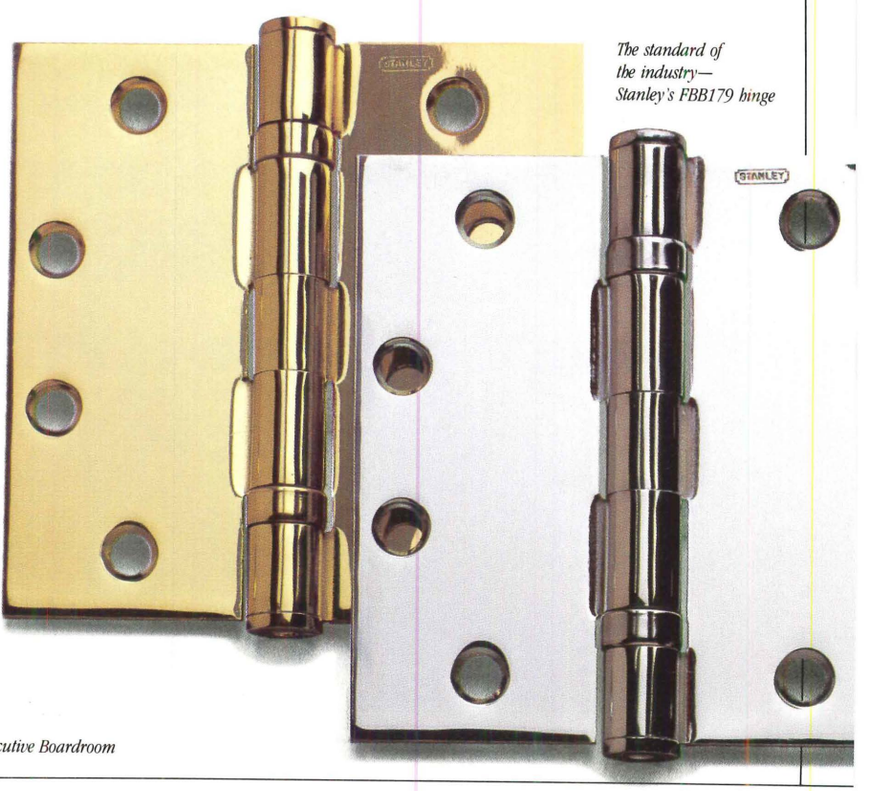
"The Crescent is a project for the ages; for people to appreciate for years to come," explained Phillip Shepherd. "The quality materials selected such as the limestone, ornamental metal and slate will only get better looking with time."



Executive Boardroom



The Crescent



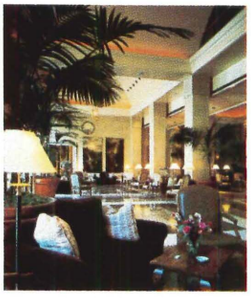
The standard of the industry— Stanley's FBB179 hinge



Custom communication, security and energy systems are typified by The Crescent's air conditioning. Seven custom, all-steel, 27′-diameter storage tanks hold 1.2 million gallons of chilled water. This energy-saving system chills the water at night during off-peak energy levels and then circulates it during the day.

The focal point of The Crescent is the Great Hall of The Hotel Crescent Court. It features limestone from Barcelona, three types of Italian marble, Louis XV furnishings, handwoven carpets and original 18th century paintings. Maintaining this elegant theme, The Crescent's rooms display fresh flowers, original art, three phones and French doors which open to private balconies.

That's where Stanley comes in. Stanley polished brass hinges not only open those French doors, they also lead the way into each of the hotel's 218 rooms and suites. All told, Stanley makes more than 4,500 entrances throughout The Crescent.



Great Hall of The Hotel Crescent Court

"Stanley's standard five-knuckle hinge met the high quality standards of the project," Shepherd added. "Like the other materials used, these hinges will stand the test of time. That's why I specified Stanley."

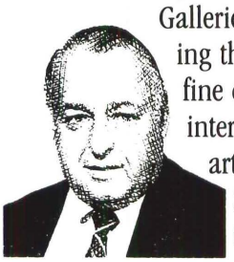


The Crescent Club

"Our electric hinges provide an attractive way to carry current to the power door locks in selected areas of the hotel and office complex," according to Dick Dixon. "When installed, you can't tell them apart from our other hinges," he added.

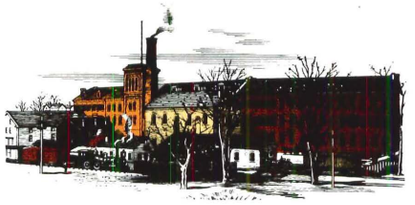
With a population of more than 2,000, The Crescent Office Towers are comprised of a 19-story center structure and two adjoining 18-story towers. Stanley polished chrome hinges are used throughout. On the 17th floor sits a mansion within a castle—the lavish, 19,000-square-foot Crescent Club. It features five private dining rooms, sitting areas, a cherry bar and a leather dance floor whose roof opens to laser-lit stars.

The Crescent adds another dimension to Big D. It's a city within a city with fountains, courtyards and The Shops and Galleries—three levels offering the latest in fashion, fine cuisine, gifts and an international selection of art and antiques. Stanley also leads the way into many of these shops which include the exclusive Stanley Korshak, Bigsby & Kruthers and The Crescent Gallery.



Dick Dixon, Stanley's Dallas/Fort Worth Sales Representative

The Crescent enters a new era of style. It was a pretty nice opening for Stanley.



DID YOU KNOW?



Steeple Tip

For centuries man has used part of his resources, even when they may have been meager, to decorate the entrances to his temples, churches, palaces, castles, even simple homes.

The early settlers of North America had little in the way of sophisticated building materials. Still, they took great pains to insure the doors of their log cabins were as elaborate as they could make them.



Ball Tip

Doors were fashioned in the shape of the Christian cross and St. Georges's cross giving rise to what we now call colonial and cross buck designs.

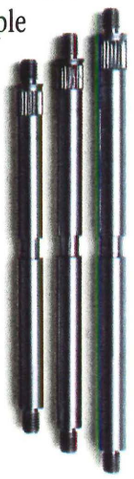
The first greeting you get from a building is made by the entrance door. Its shape, texture and color can send a clear message from the occupant to a visitor.



Crown Tip

Decorating tips

Trimming a door with different types of hardware is another way to make a statement. Stanley can help you make doors special with items like its decorative tips in three styles: ball, steeple and crown. Each is finished in bright brass, bright chrome or dull brass. Any of the tips fit onto a specially designed conversion pin that replaces the normal hinge pin. Thus standard hinges can easily take on a special appearance whether they are existing or new.



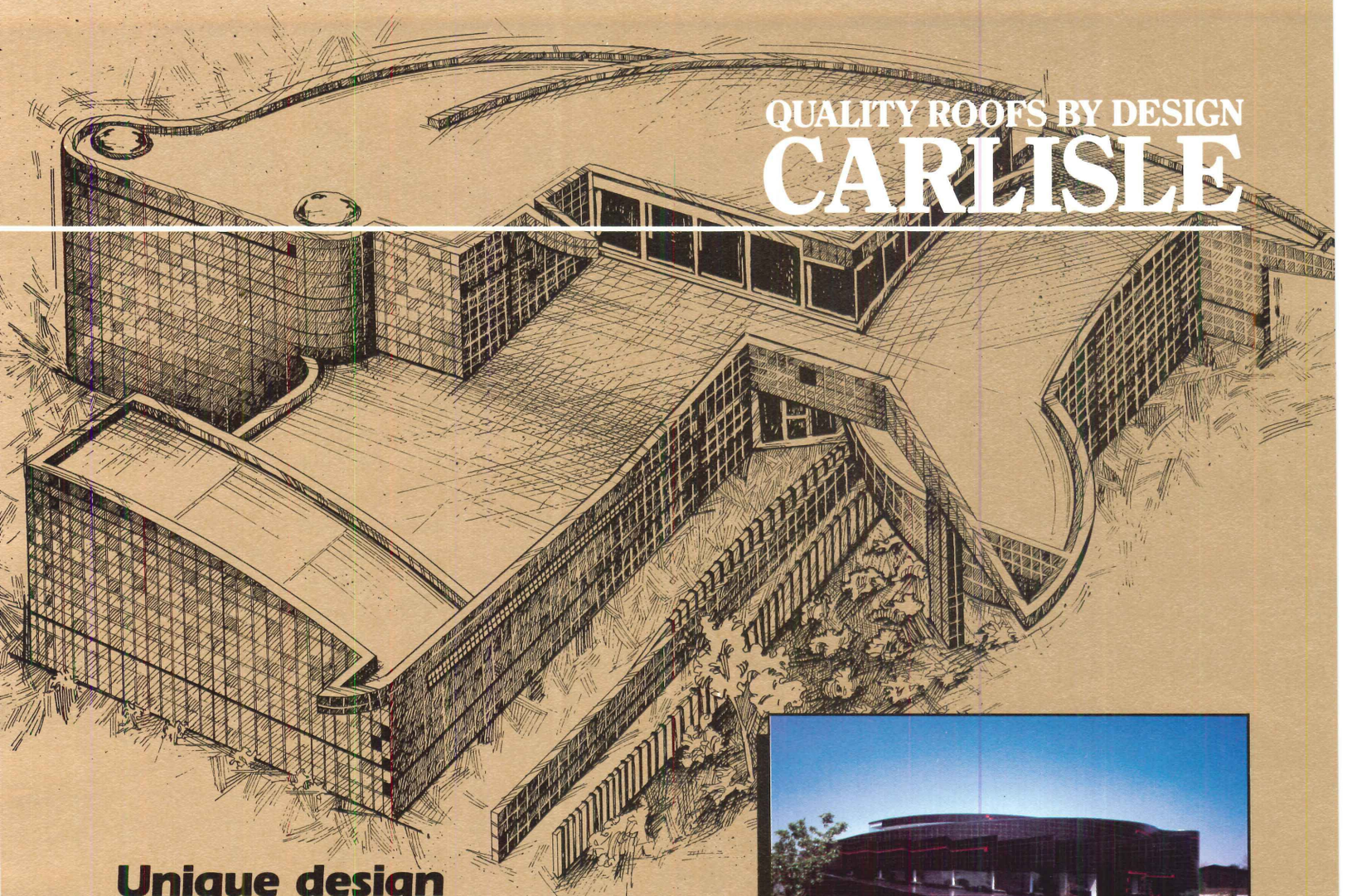
Conversion Pins

For a free sample conversion pin and tip, just specify tip style, finish and 3½", 4" or 4½" pin size to Dave Loughran at 1-800-622-HDWE,ext. 5809.

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QUALITY ROOFS BY DESIGN
CARLISLE



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Architect: Harvey Ferrero
Roofing Contractor: Brodak Roofing & Sheet Metal
Carlisle Manufacturer's Representative: Holmes Assodates

"Design A" follows the irregular contours of the roofline—and fits them like a glove.

Call it unique, exciting or striking. When Max Klein, a major plastics housewares products manufacturer decided to build a new corporate headquarters, he resolved it would be unconventional, beautiful and memorable.

Designed by Detroit architect, Harvey Ferrero, the Southfield, Michigan structure is all of these.

The inventive architectural concept is difficult to describe. Its spirals, curves, slopes and angles flow with an irregular but fluid geometry.

And the first-class-plus building required a top-of-the-line roofing system. One flexible enough to follow the intricate geometry of the roofline. A system strong and reliable enough to perform outstandingly under Michigan's rigorous weather conditions. A system that is fully adhered to hold fast for thousands of tomorrow's.

They chose Carlisle's "Design A" Fully-Adhered Roofing System.

Owner, Phil Brodak, Brodak Roofing of Wixom, Michigan observed "The roof has more angles than I've ever seen. It is flat, circular, barrel-shaped and juts in every imaginable direction. And because the roof is visible, it had to have a smooth, perfect, solid black surface."

Concluded Brodak, "The Carlisle 'Design A' system is the only roof I know that could perform well under such design considerations. It was the perfect solution. Its fully-adhered roofing system allowed us to go wherever the roof went." Carlisle's roofing membranes include the standard EPDM and a new polyester reinforced EPDM. Both are available in designer colors–basic black Sure-Seal® or the innovative white-on-black Brite-Ply™.

Next time you need a roofing system try a Quality Roof by Design . . . try Carlisle.

Need more information?

Call a Carlisle representative/distributor. Or call Carlisle SynTec Systems toll free at 1-800-233-0551. In Pennsylvania, 1-800-932-4626. In Canada, 1-416-673-5557. Or write Carlisle SynTec Systems, P. O. Box 7000, Carlisle, PA 17013.

CARLISLE
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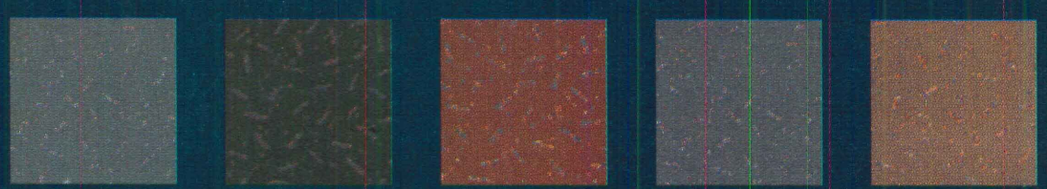
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THE C/S GROUP

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Survey of government's role in housing produces some surprising answers

A national survey conducted for an educational organization, the National Housing Institute, indicates that Americans are willing to pay $12 billion to $17 billion annually in additional taxes to fund federal programs that provide better housing and more homeownership for middle-class, working-class, and poor families. The survey of some 1,000 individuals was conducted by R-L Associates and, according to NHI, shows that there are millions of Americans with serious problems in getting a home and paying for it.

"White- and blue-collar workers have joined the poor in this nightmare," says NHI chairman David C. Schwartz, a political-science professor at Rutgers University and a member of New Jersey's general assembly. He points out that the poll's findings represent both a challenge and an opportunity to business. For example, most workers favor tax incentives for companies that offer housing assistance as a personnel benefit. Some companies and institutions are already moving in this direction, he says—and are contributing millions of dollars towards affordable housing in partnership with nonprofit groups and government agencies. He projects that 17 million adults think industry should take such responsibility.

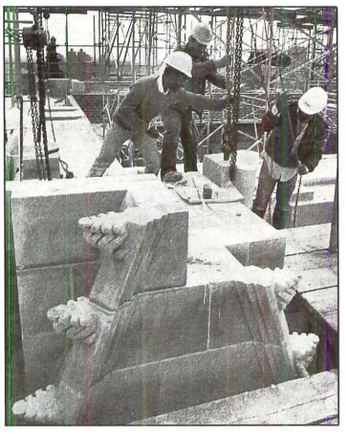
The survey found voter support on six specific programs:

- A down-payment loan program for young families.
- A mortage-rate reduction fund.
- Emergency loans and grants to prevent homelessness.
- A program to finance dwelling-unit modifications for the needs of the frail and elderly.
- Tax benefits for employer-assisted housing.
- Public financing to rehabilitate obsolete buildings for low-income housing. *Peter Hoffmann, World News, Washington, D. C.*

Completing the cathedral: a call for apprentices

The Stoneyard Institute of the Cathedral of St. John the Divine in New York City invites students of architecture, engineering, and preservation to participate in a program that "brings the medieval tradition of stone construction into the 20th century." Scheduled for July 25 through August 5, the two-week workshop/seminar program, taught by a distinguished international faculty, will provide intensive hands-on experience in stone cutting, carving, and construction—as well as exploration of related design issues. It could also involve working at new heights (photo). Students will create stone-working templates, then the masonry units themselves, and finally "incorporate their blocks into the rising form of the cathedral's new tower."

The institute was founded in 1979 for the purposes of completing the unfinished cathedral (the largest in the world) to the original 1929 design of Ralph Adams Cram and, in the process, training local youth in stone-masonry skills. This will be the second summer that the academic course for design professionals will be offered. Tuition is $500, with possible help available, and the application deadline is June 1. Contact program director Barbara Timkin at the Institute, 1047 Amsterdam Avenue, New York, N. Y. 10025 (212/316-7460).



Free-lance employees—the wave of the future?



"In the old days, a firm might turn down a project because it didn't have the necessary staff to handle it properly," says architect David McFadden, who runs Consulting For Architects, Inc., a company that places free-lancers in architects' offices in New York. "Today, firms can maintain a lean staff in lean times and hire free-lancers when business picks up. In the process they can hire people with the particular skills needed for particular jobs."

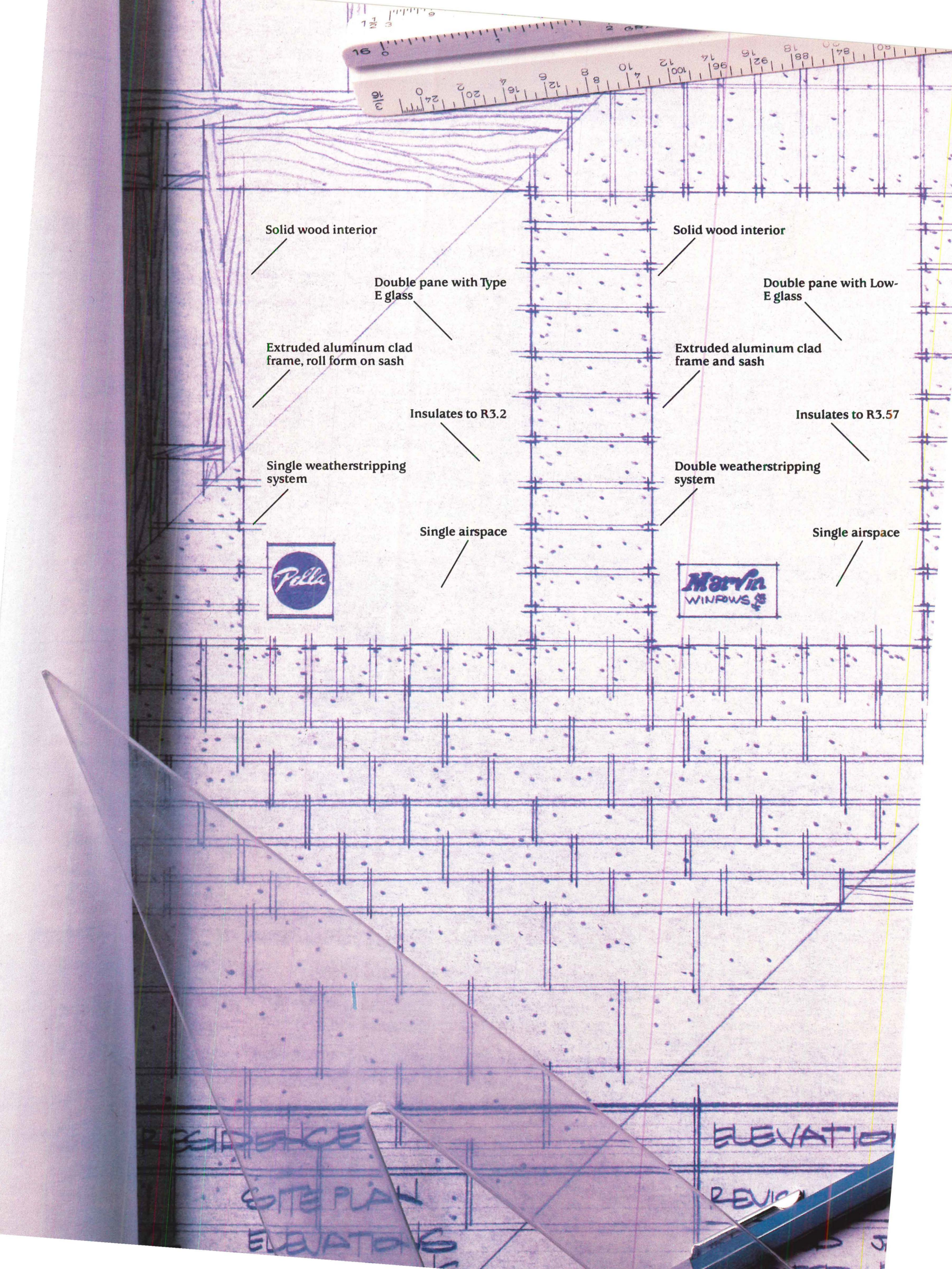
Architecture is not the only profession turning more and more to free-lance employment. One study finds the number of temporary hirees almost doubled in a recent four-year period—over 10 percent of them skilled technicians or professionals.

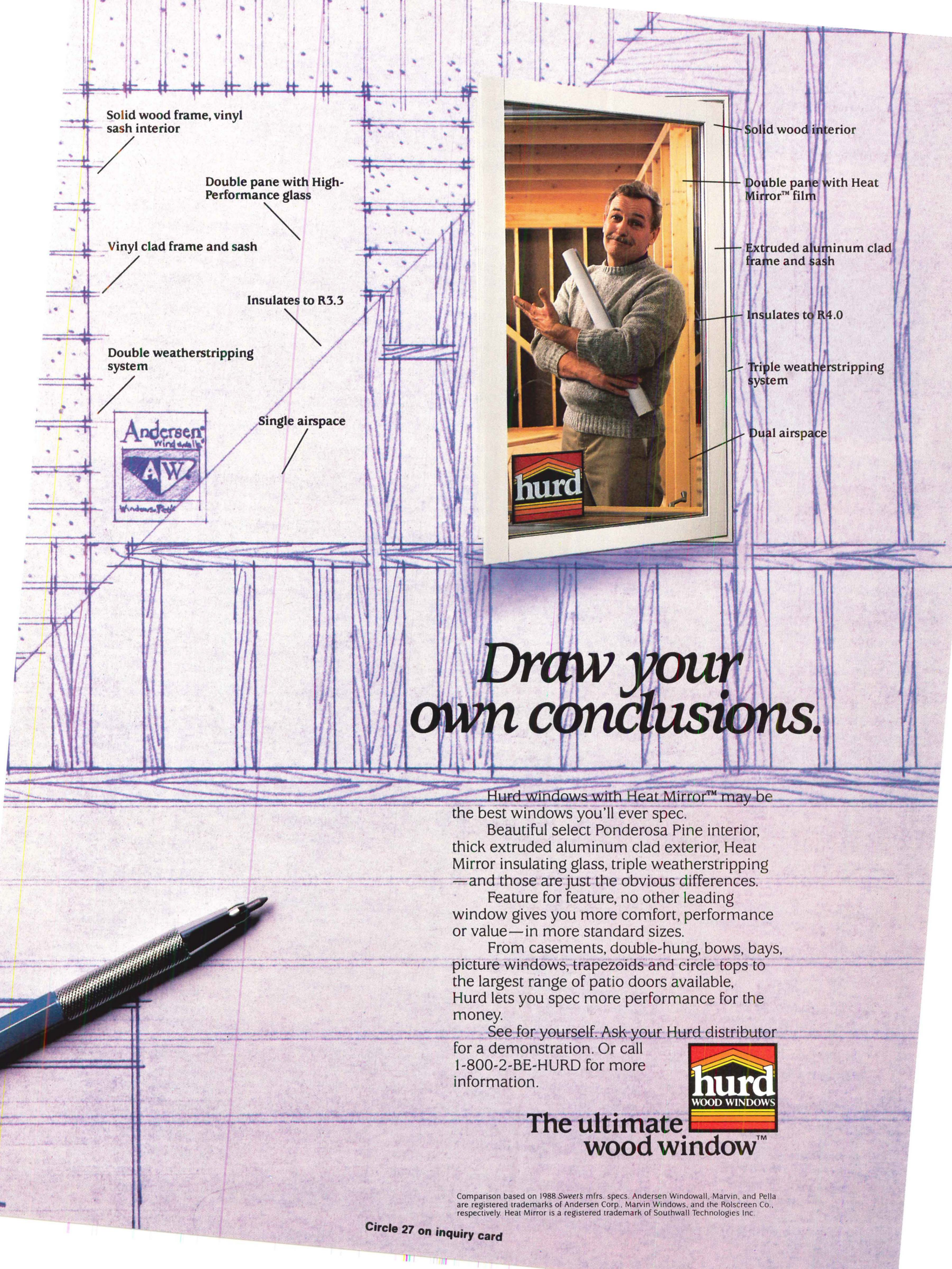
A growing number of young architects see free-lancing as a fast-track means to getting ahead, continues McFadden. "Instead of working on just one type of project or one aspect of design, free-lancers acquire varied experience." The goal is to land permanent positions at a higher level more quickly than by remaining on one job for a given period of time.

Not everyone agrees that this works. "Some firms still look warily at designers who have jumped from one job to another," says Valerie Glod, an associate with Edwards and Shepard, a personnel agency that deals only with full-time employment. Margot Jacqz of the RitaSue Siegel Agency concurs. "Even in a fluctuating market, many firms still want to hire on a permanent basis."

Architemp's Ltd., also in New York, is part of the new wave of agencies trying to change this attitude. "We place designers on everything from one-day charettes and weekly assignments to monthly—even yearly—projects," states president Sandra Fields. Like CFA, Architemp's usually bills for its free-lancers at an hourly rate and makes money by paying them at a lower one. Both agencies sometimes work on a flat commission basis, determined by the nature and length of a project. If an employer wishes to hire a free-lancer on a permanent basis, the agencies allow him to buy the free-lancer's contract.

Assuming that architectural firms will become accustomed to the free-lance concept, agencies that find this type of employment plan to grow. McFadden is preparing to establish a second office in Boston and hopes to open others in Washington and Chicago after that. In an age of an increasingly mobile workforce, free-lance architects may soon be shuttling back and forth from city to city, picking up jobs wherever the market is strongest. "Have T-square, will travel," might be their credo. *Clifford Pearson*


Solid wood interior
Double pane with Type E glass
Extruded aluminum clad frame, roll form on sash
Insulates to R3.2
Single weatherstripping system
Single airspace
Solid wood interior
Double pane with Low-E glass
Extruded aluminum clad frame and sash
Insulates to R3.57
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Legal perspectives: It may be time to get consultant agreements on a businesslike basis

Until now, many architects and their engineering and other consultants have worked together on a handshake or other informal agreement. This, says an eminent attorney, may no longer do.

By Arthur T. Kornblut



Few things are more basic to success in the design process than the professional collaboration between an architect and his or her engineering consultants. Unless the architect's firm includes professional engineers on staff, the architect will retain professional engineers as "subcontractors" to provide required engineering services for a project.

Many of these relationships develop over the course of a career and, despite current-day concerns about liability and good business practices, they may be based on a simple exchange of letters or even a handshake. Although I am not anxious to tamper with such arrangements when they are successful, some thoughts are in order about the problems that can occur in unanticipated circumstances.

Problems could start with the realities of how consultants are paid

When an architect bills a client, he expects to be paid promptly and in full. When an engineer bills an architect, he likewise expects to be paid promptly and in full.

Unfortunately, expectations and reality often do not mesh. As a result, it is common practice for architects and engineers to have tacit, if not written, agreements that the engineers will be paid their portion of fees after the architects receive payment from the owners. Most architects are either unwilling or financially unable to bankroll payments to engineering consultants in the absence of payment from the owners.

Some engineers argue that architects must pay staff employees who are engineers, so it should be no different with outside consulting engineers. Although there is some logic to this, it fails to distinguish between the substantial difference in dollar amounts represented by fee payments to consultants and salary payments to employees. Nevertheless, as long as architects and engineers have a good working relationship, the normal payment process is accepted, albeit reluctantly.

When the relationship sours, especially when an owner's failure to make payment is unrelated to any failure of performance by the engineer, the latter may seek to use legal means to recover payment from the architect. The architect then will be caught in the middle—defending against the engineer's claim on the one hand and having to initiate legal action to collect from the owner on the other.

Avoiding problems depends on a clear, written understanding of the terms and timing of consultant fee payments

It often comes as a surprise to architects to learn that the 1979 edition of the AIA standard agreement form between architect and engineer (Document C141) did *not* contain any language that would make payments to the engineer contingent on receipt of payment from the owner. Any such condition had to be drafted and inserted by the architect.

This omission from the printed form has been corrected in the 1987 edition of C141 (which is now called "Architect-Consultant Agreement" to facilitate its use with consultants other than professional engineers). In the 1987 version, Subparagraph 10.3.6. states:

"Payments to the Consultant will be made promptly after the Architect is paid by the Owner under the Prime Agreement. The Architect shall exert reasonable and diligent efforts to collect payment from the Owner. The Architect shall pay the Consultant in proportion to amounts received from the Owner which are attributable to the Consultant's services rendered."

If there are any contingencies or other special provisions related to fee payments contained in the architect's agreement with the owner, these should be disclosed to the consultants. This is specifically required by Subparagraph 10.3.2 of AIA Document C141.

It should be noted that there have been numerous court decisions over the years interpreting similar pay-when-paid provisions in contracts between general contractors and subcontractors. The courts have divided into two schools of thought. In one, the provisions are interpreted to be an absolute bar to payment unless and until the general contractor actually receives payment from the owner. In the other, the courts have ruled that the provisions permit the contractor only to defer payment for a reasonable time—that the general contractor cannot withhold payment indefinitely when the owner's failure to pay is not due to any failure of performance on the part of the subcontractor.

It is now unknown how the courts or the arbitrators will interpret the new AIA language.

A related issue is the cost of an architect's collection of fees from his client

If an architect is forced to seek legal counsel to bring a demand for arbitration or a lawsuit to collect unpaid fee bills, he often bears the brunt of the time and expense involved. Yet, the consulting engineer will be a direct beneficiary of that effort if the architect is successful, because the engineer will receive his or her portion of the fees collected. To share the burden proportionately, it may be appropriate for the architect and consultants to agree that they will share on a pro-rata basis the cost of collection and that they will cooperate in the effort, even though it is the architect who legally must take action against the recalcitrant owner. To that end, the following contract clause might be considered:

"In the event the Architect is required to retain legal counsel for the collection of any amounts due and owing from the Owner to the Architect, the Consultant shall share, on a pro-rata basis, the legal and other expenses incurred by the Architect. The factor for computing the Consultant's pro-rata share of such expenses shall be determined by dividing the Consultant's portion of the total amount due by the total amount due and then multiplying the result by the total of such expenses. The Consultant shall cooperate fully with the Architect in any legal action or arbitration proceeding related to collection of amounts due and owing."

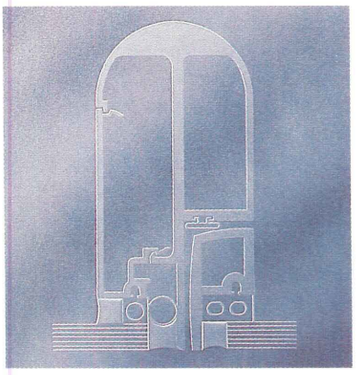
If a consultant is unwilling to agree to the pay-when-paid language now found in the AIA agreement form, or is unwilling to share in the costs of collection if that becomes necessary, the architect should weigh the value of the consultant's potential contribution to the design team against the risk that the architect would solely retain.

Mr. Kornblut is a registered architect, a practicing attorney in the firm of Kornblut & Sokolove in Washington, D. C., and former chairman of the American Bar Association's Forum Committee on the Construction Industry.

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Practice:
Make that percent for art pay off

With the growing trend of both public and private clients to allocate a percentage of their construction budgets to art, architects have an opportunity—but also a challenge—to assure that the money is well spent.

By Joyce Pomeroy Schwartz

Two women sit in Vito Acconci's "Garden of Columns" (photo, top right). Engaged in animated conversation, the women are obviously enjoying a private moment in this cultural oasis.

Successful art like this does not happen by chance. It is planned, and the procedures in its commission affect the quality of its results.

Creating art for public places affords artists an opportunity and a challenge not provided by the usual process of producing works for galleries or museums. The process engages all the players: the architect, the client, and artist. Inherent in it are all the frustrations, achievements, and satisfactions one can imagine would be necessary to bring contemporary art of museum quality into the daily lives of the general public.

The public percent-for-art mandate is causing hundreds of states, cities, and towns to commission art. But the architect, a master planner who is traditionally the placemaker and initiator of artworks, is having trouble controlling the esthetics of his projects as client art bureaucracies often impose their own ill-conceived concepts. Anchorage (photo, top left) could have been one example. What the client may often get is not art but imitative decoration, sometimes because architects forget to include the effort to control art as a reimbursable in their client contracts.

Architects and artists should be ideally suited to work together

The artist requires the architect's knowledge of space, materials, and function. Further, the architect has the ability to translate the artist's visionary concepts to the client. Especially for complicated site-oriented art, in which the boundaries of art, architecture, and landscape design meld, the team must function together.

Art consultants try to synthesize all the players' needs, including educating the client. They help identify the human factors, establish and maintain a positive climate, and expedite contract negotiation, fabrication, and installation, acting as the liaison between everyone from architects to lawyers to installers.

The creation of a work from maquette to execution entails an awareness of the fabrication process by the client, as well as a leap of faith in the artist's evolution of the final work. To counteract selection committees' preconceived ideas, consultants offer them other possibilities. Slide surveys of historic and contemporary artworks, derived from artists, galleries, public-art slide registries, dealers, museums, and collectors, are useful. Long before a work is commissioned, professional guidelines and standards of quality for the art selection process are established. A model for this process is the Federal General Services Administration Fine Art Program.

Underlying any project is the need for realistic art budgeting

While many projects today are funded by a percent-for-art program, others are funded by a developer to cite a building's uniqueness and high quality and to help enhance tenant, community, and employee relations. Ideally, the art budget is planned at the same time the project is conceived. Funds for art can better be found when it is seen as a necessary ingredient. Spending one-half of 1 percent to 2 percent of the construction costs for each building is customary and realistic. The actual percent can be allocated on the square-foot rental costs of space, the higher rents producing the higher percent.

Ms. Schwartz is head of Joyce Pomeroy Schwartz Ltd. in New York, consultants on art for public spaces.



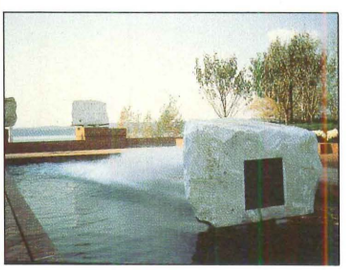
An art committee in Anchorage, Alaska, first commissioned artists to embellish the city's Historical and Art Museum without consulting design architect Steven Goldberg of Mitchell/Giurgola Associates. Goldberg flew to Alaska to convince the committee that the art should be integral to the building facade and that the architect was such art's rightful provenance. Artist Ned Smyth's work was finally selected because it met the architects' conditions of scale, material, and form, and possessed relevant Alaskan imagery.



Artist Vito Acconci's "Garden of Columns" is surrounded by a cafeteria, bank, and shops in Coca-Cola U. S. A.'s headquarters (by architects Heery International with interior architects Stevenson & Wilkinson). It relates to the American mall as a place to meet, eat, and shop. His design is derived from five black structural columns and satisfies his mandate by transforming the otherwise static architectural elements into a lively interior "forest." The 13 cylinders were carved out to contain seats, lighting, plants, and even a fish tank.



There was little time to choose art for a Philadelphia hotel by Welton Becket. Selection was begun shortly before the building was to open and, to avoid last-minute "plop art," the art committee, including representatives of the architectural firm, was shown works that had functions, such as this fountain by Giuseppe Penone—a leading artist of the Italian Arte Povera Movement. Despite the time constraints, he made a specific proposal including a maquette, drawings, and engineering studies that explained his concept and the construction.



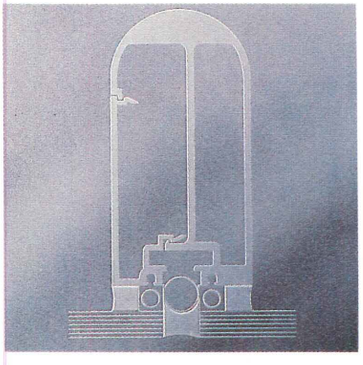
Within a fixed budget, the art committee for a new office complex in Alexandria, Virginia, combined the landscape and art budgets. It thus produced a collaboration between landscape architect M. Paul Friedberg and artists Anne and Patrick Poirier so that the landscape could itself become the work of art. Instead of putting art in a place, art is the place. The result is a grand public park on the banks of the Potomac, a Promenade Classique akin to historic European gardens, with its many and diverse fountains, sculptures, and trees.

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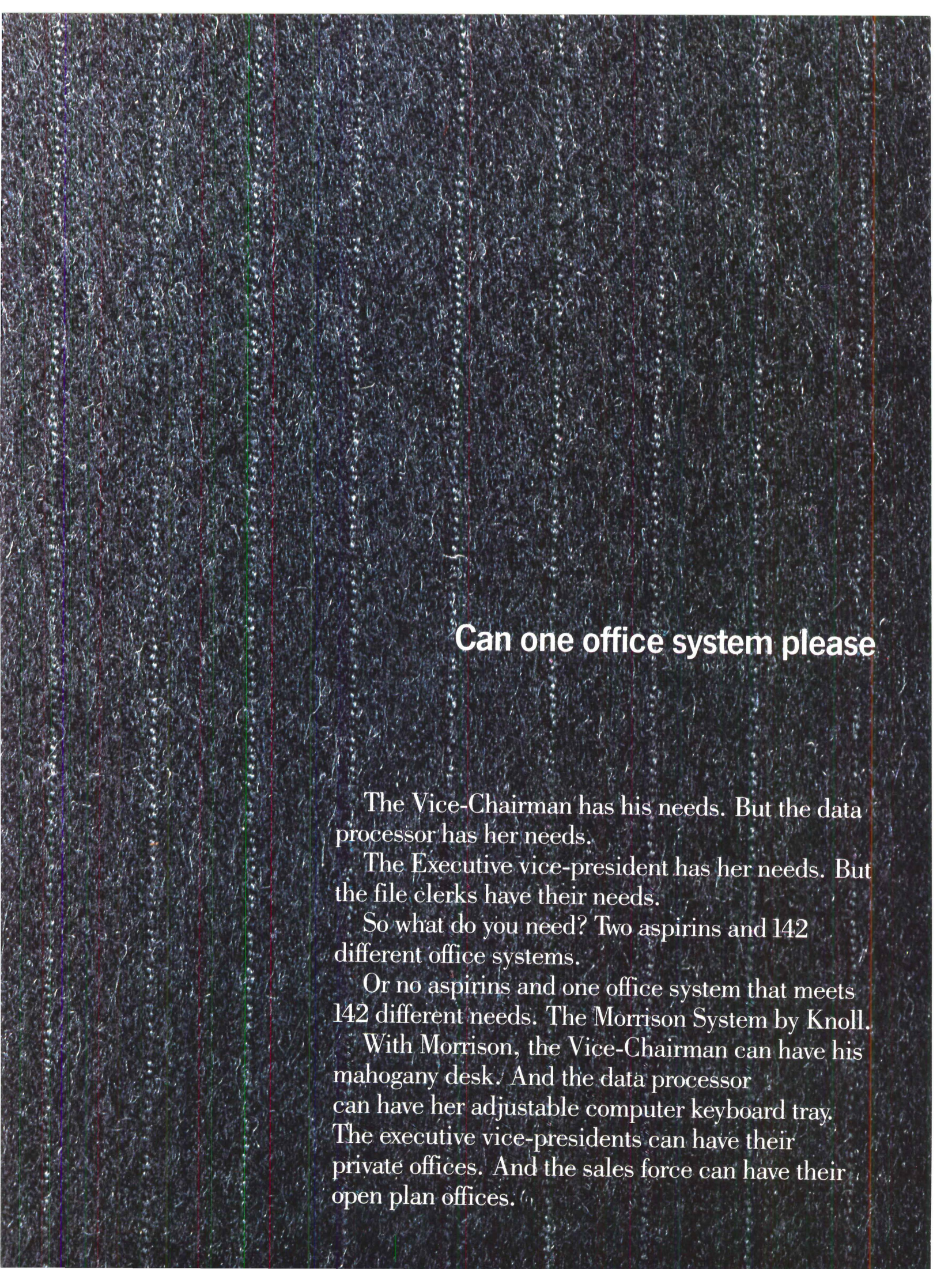
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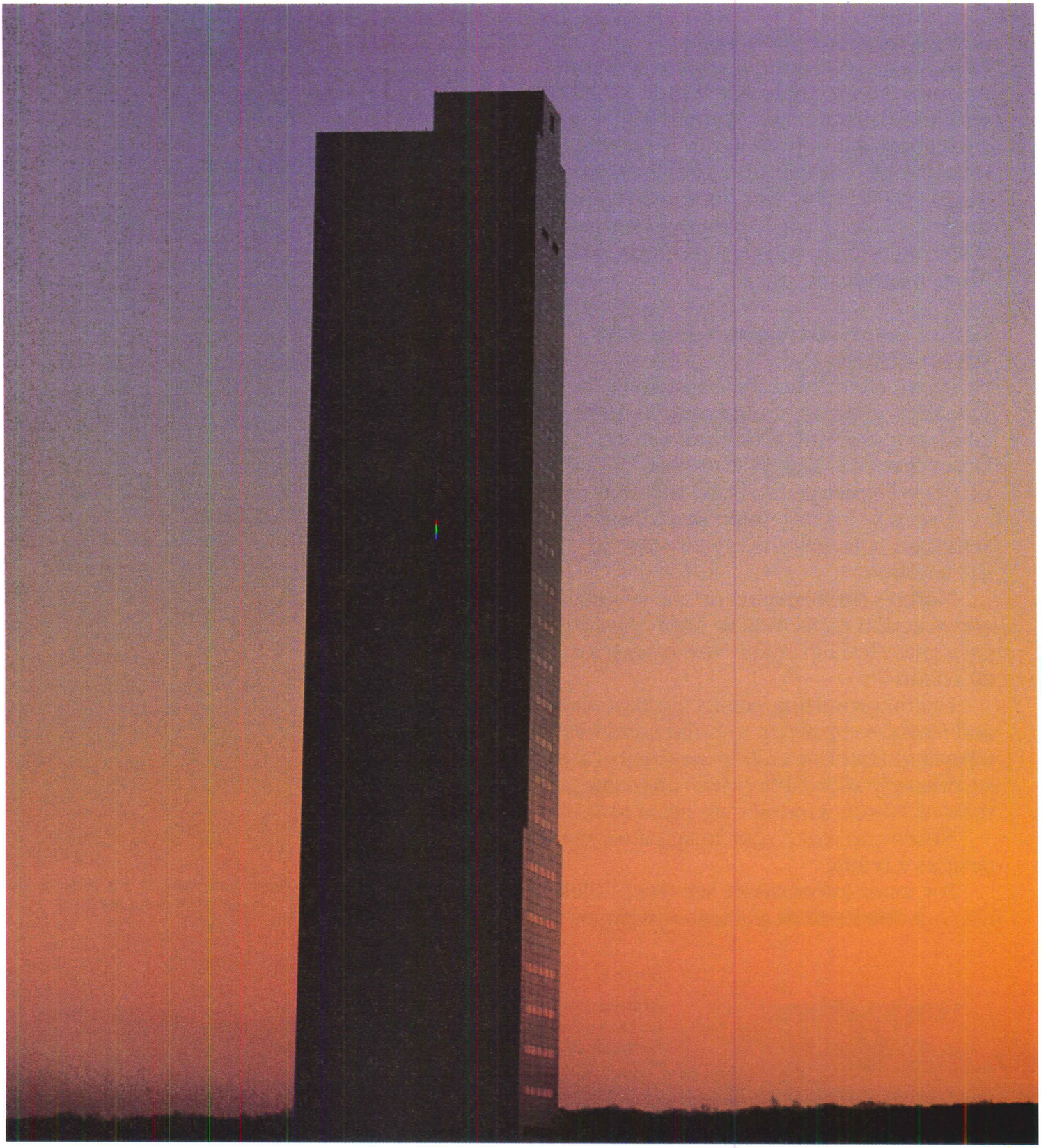
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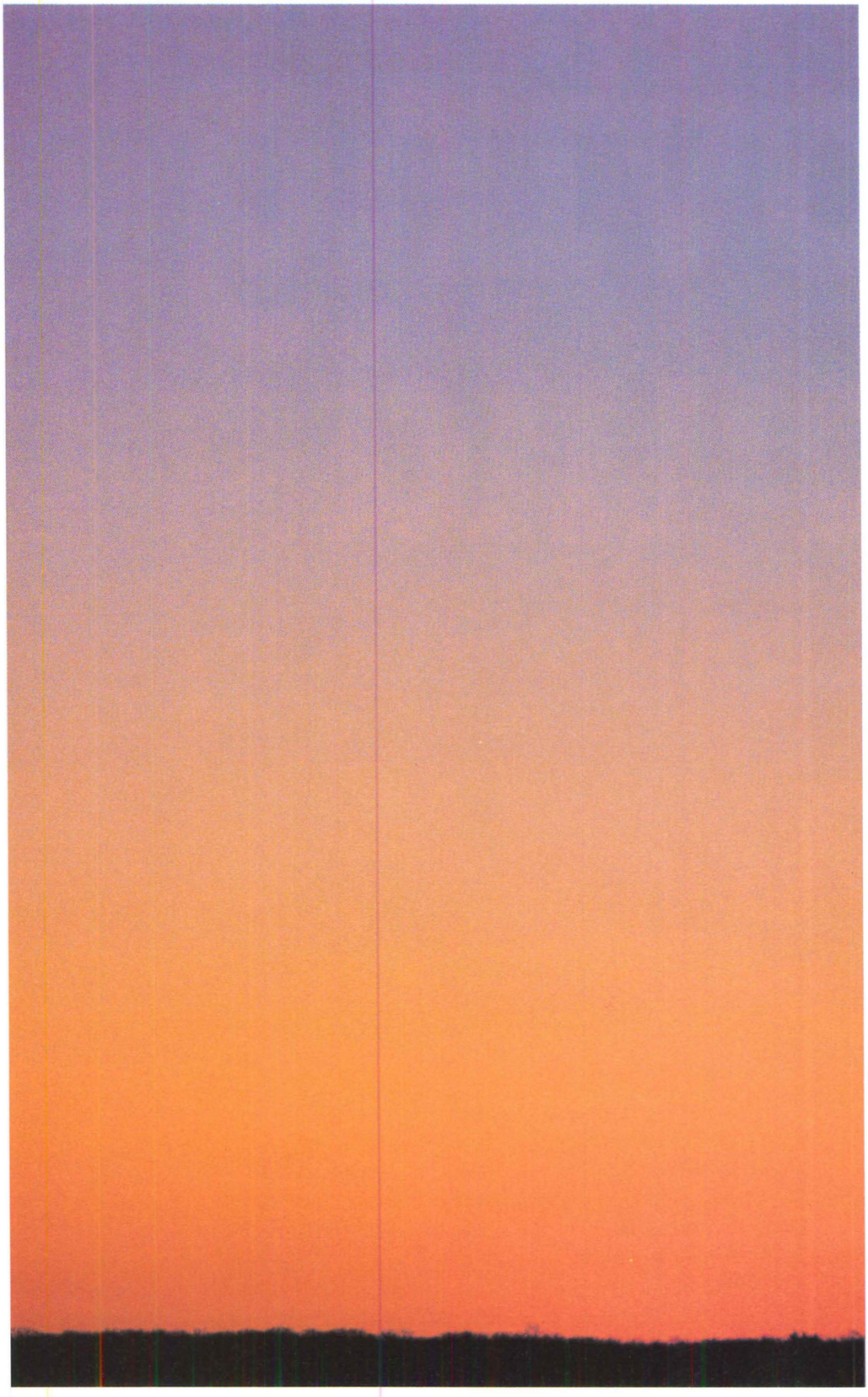
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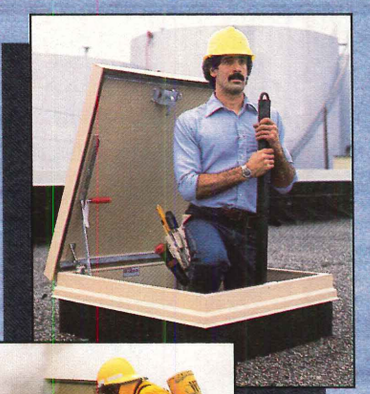
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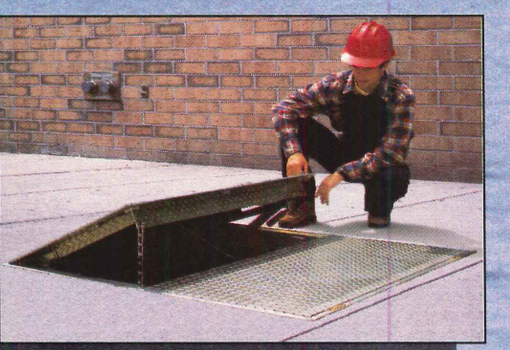
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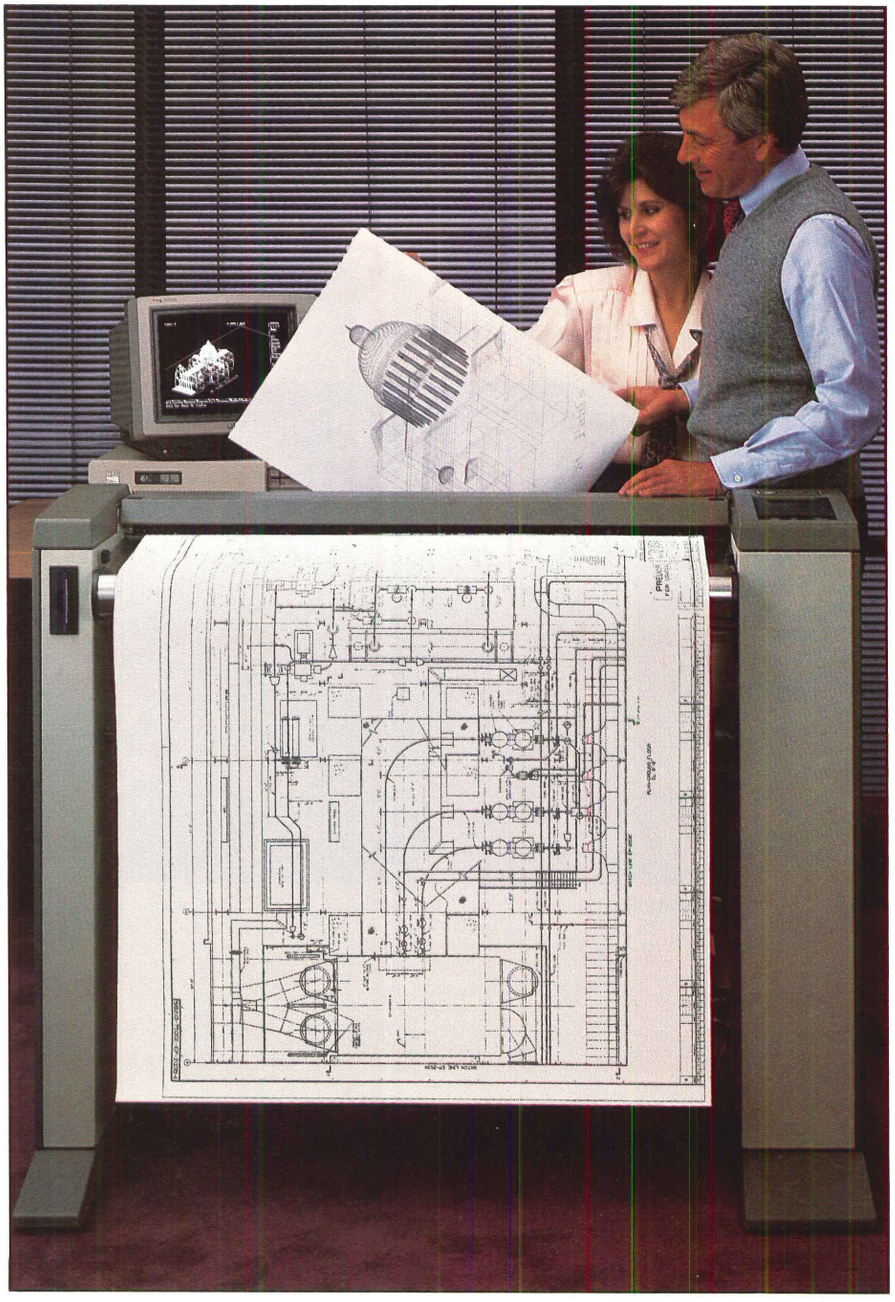
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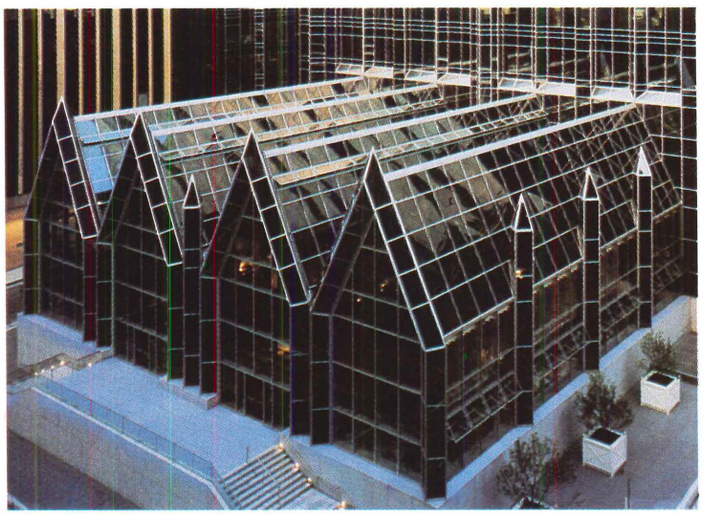
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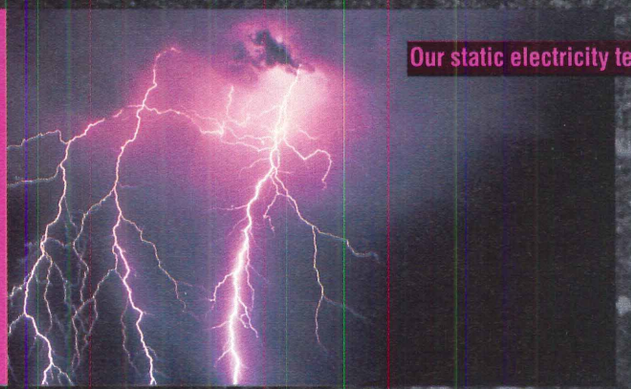
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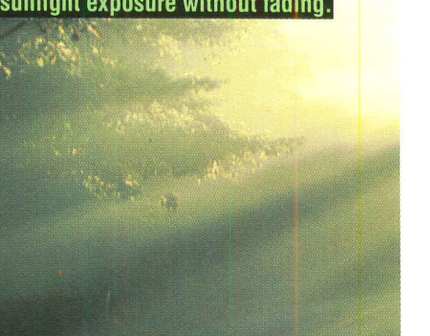
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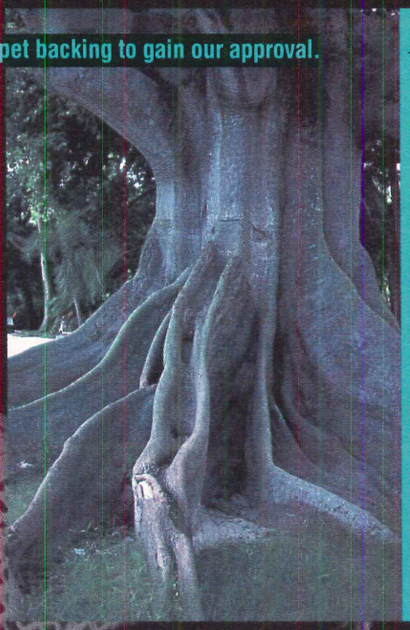
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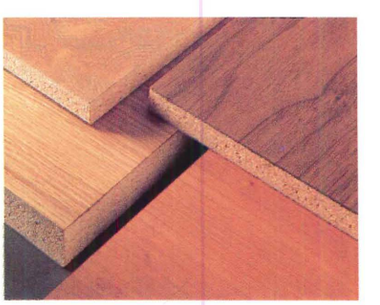
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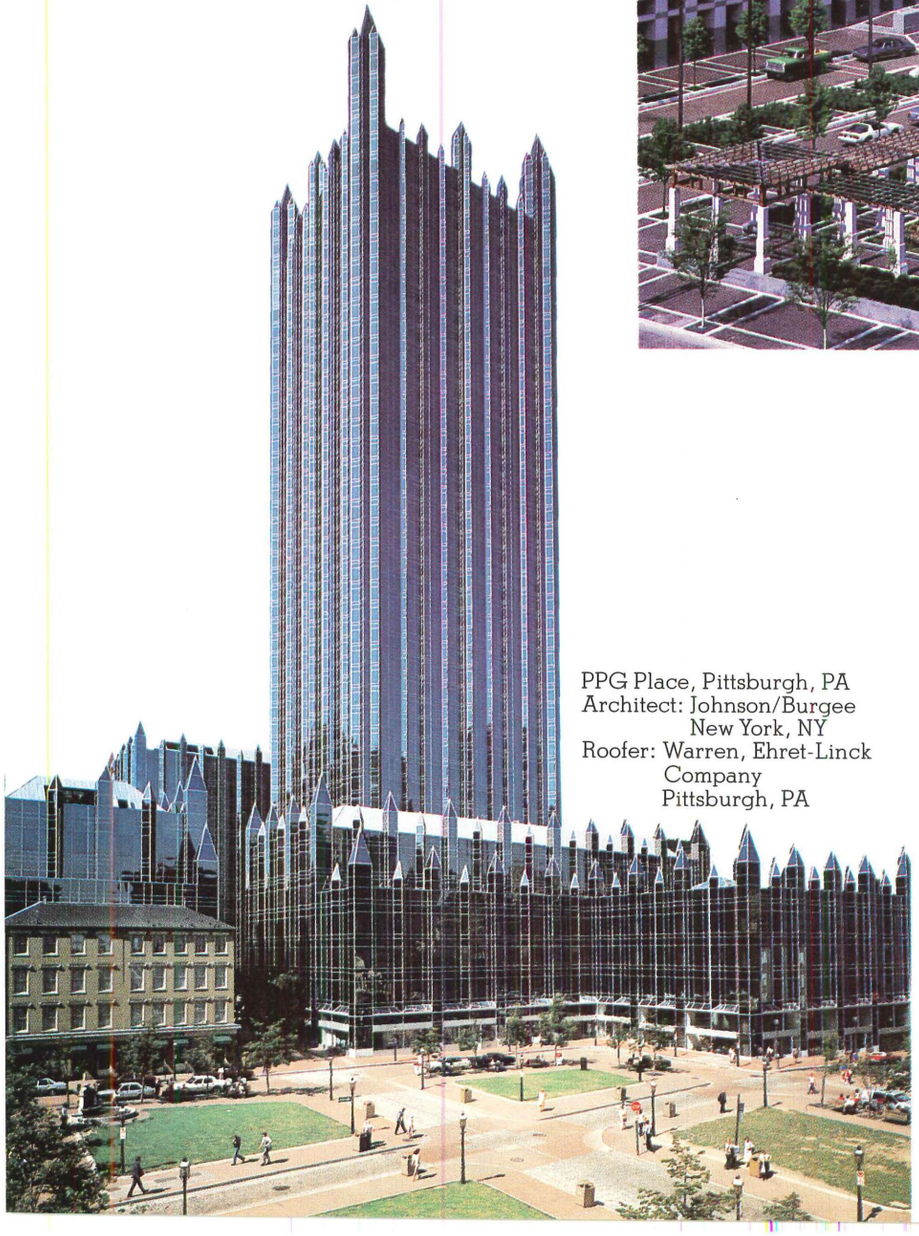
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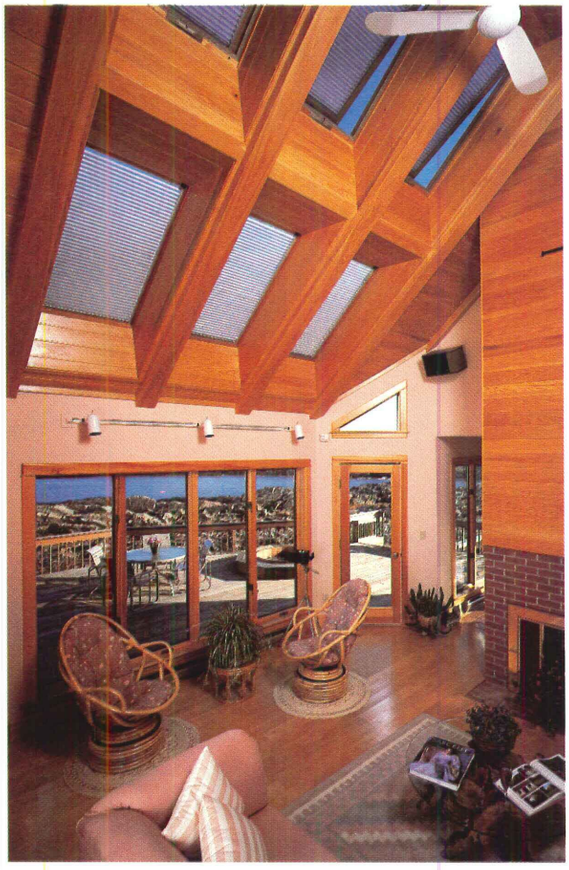
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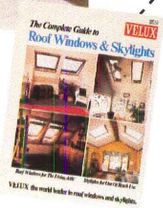
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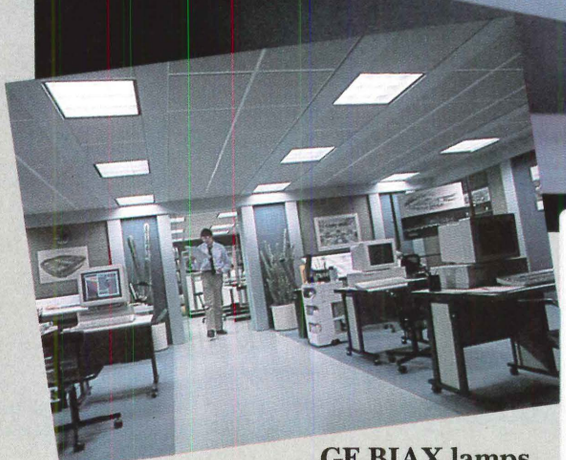
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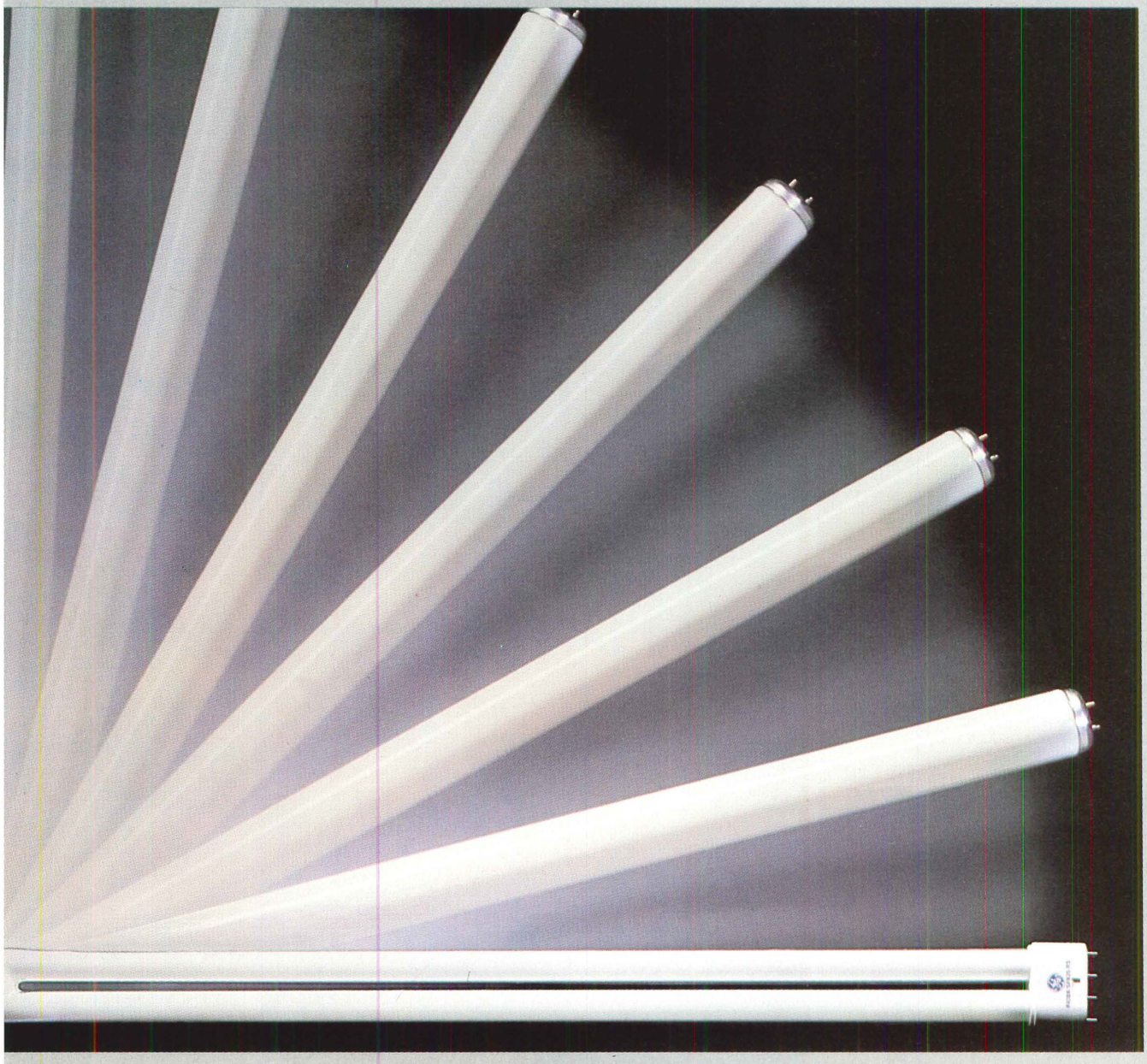
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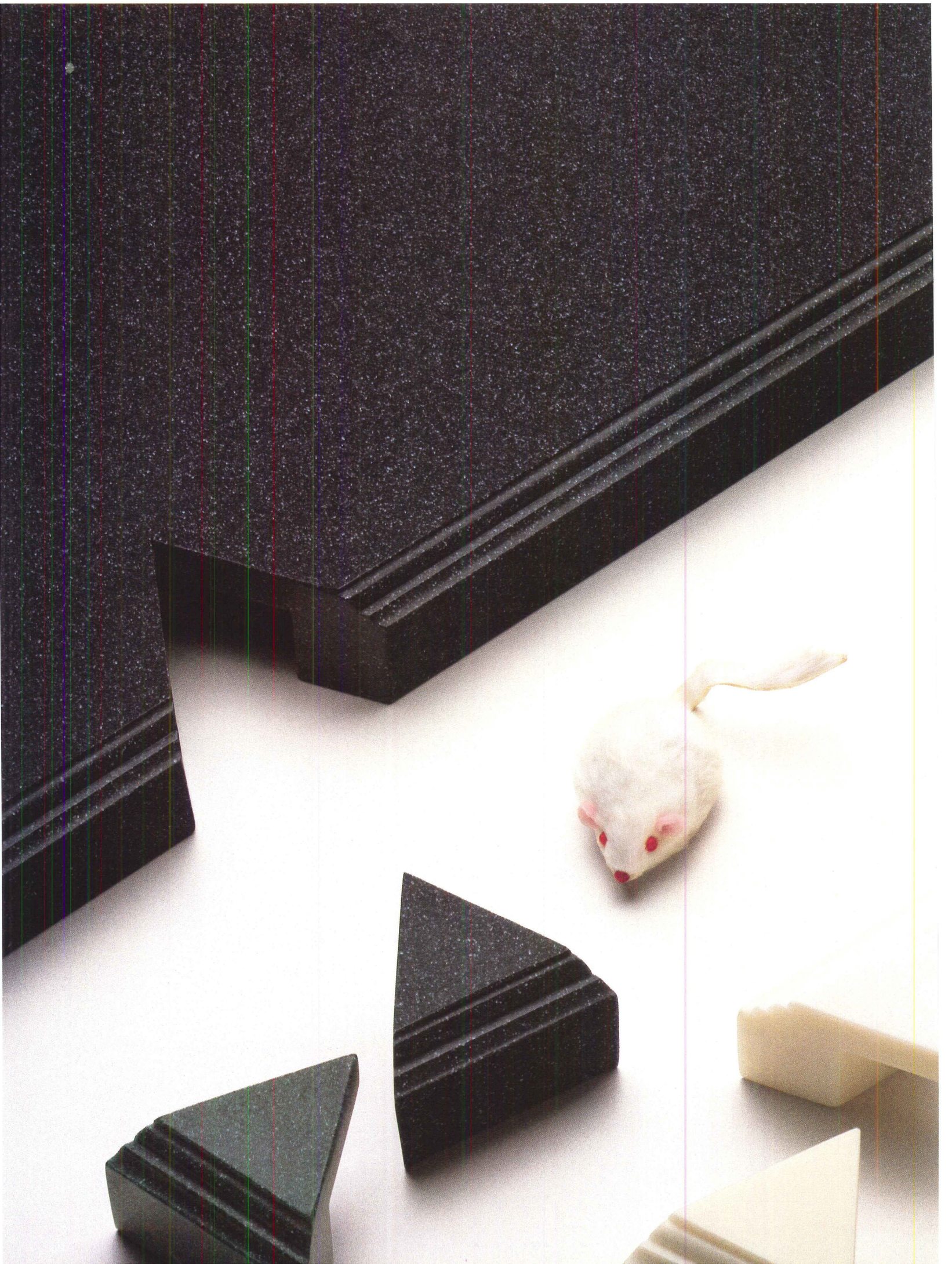
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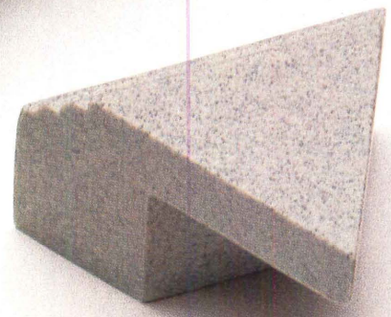
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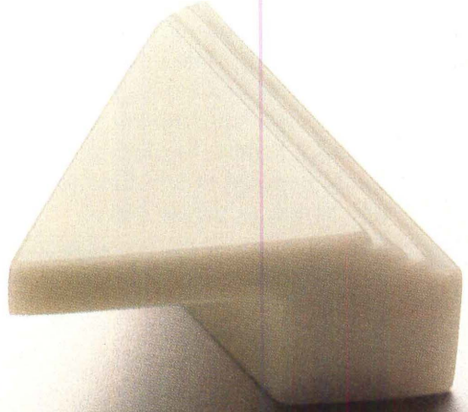
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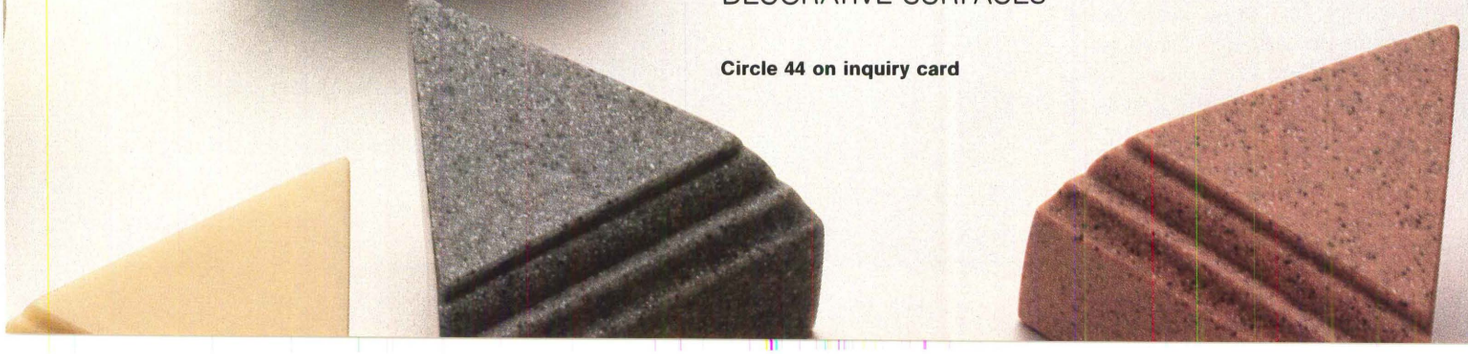
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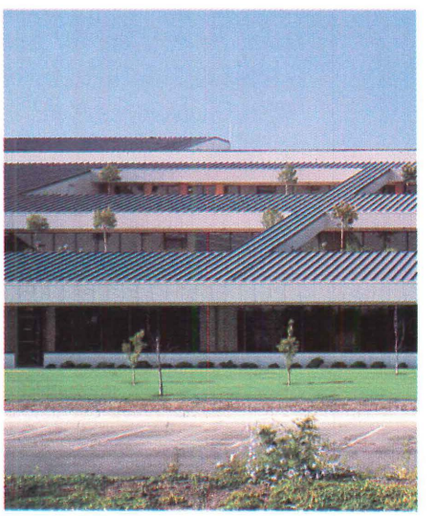
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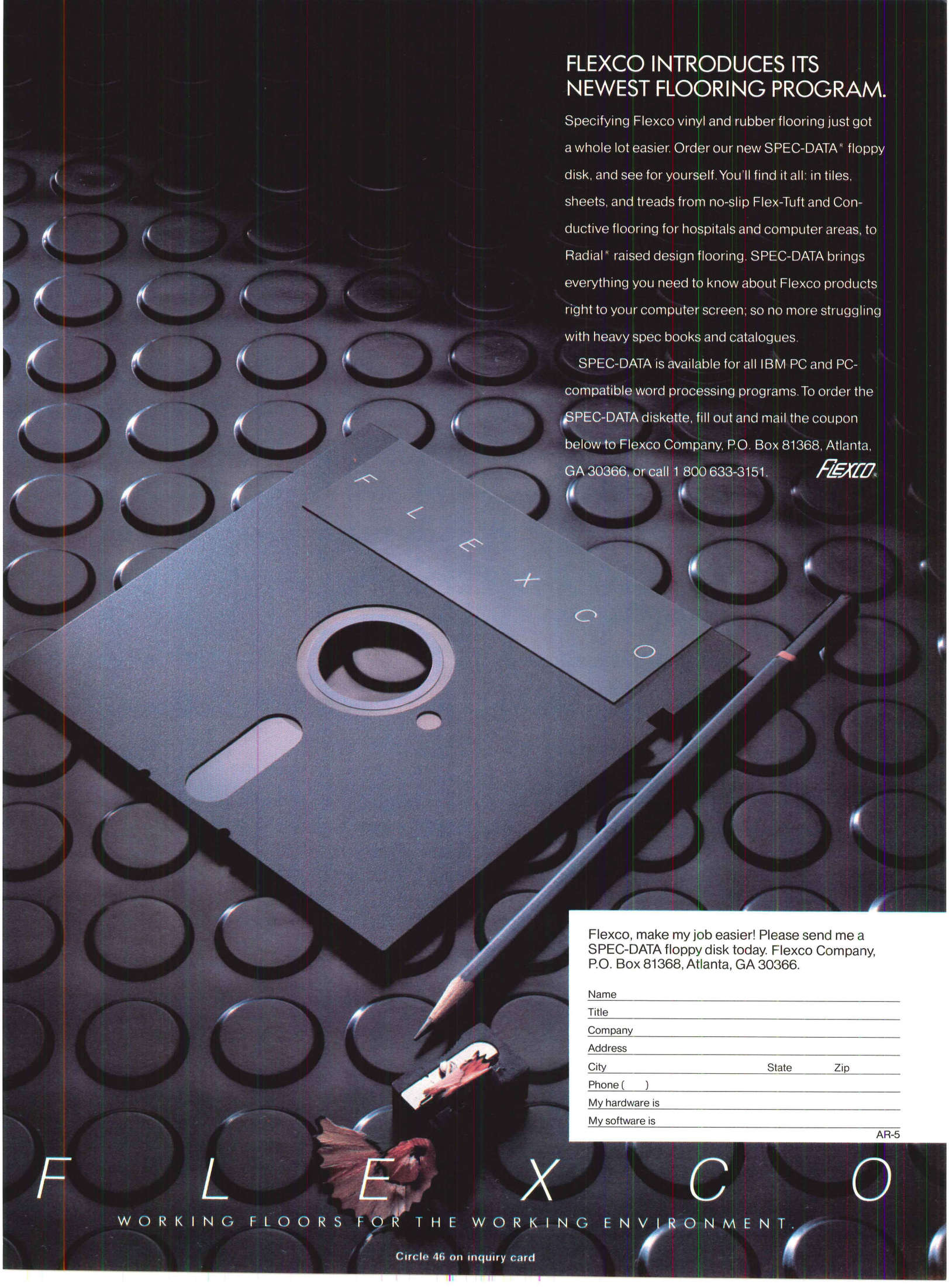
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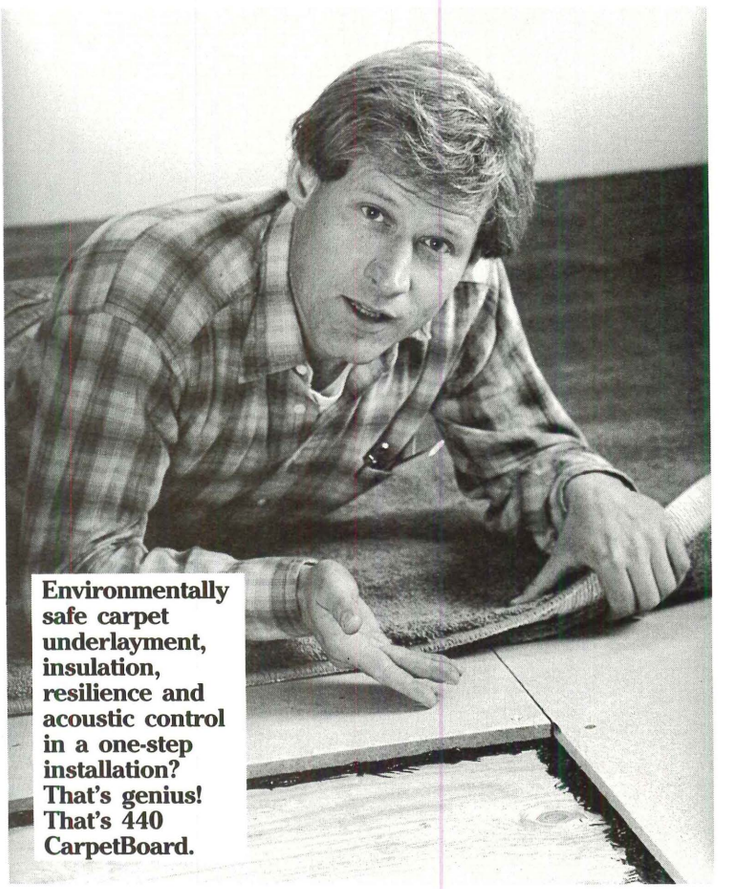
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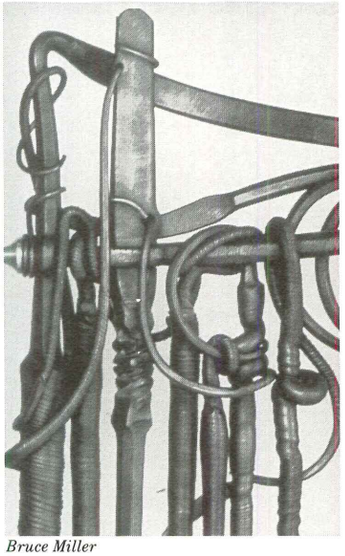
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Architects and artists: happy together?

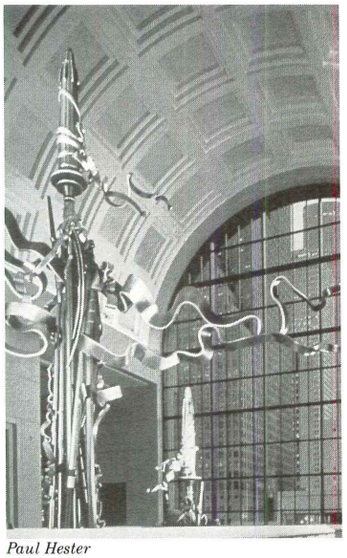
Public art is experiencing a revival, we are told by the organizers of an exhibition, *Architectural Art: Affirming the Design Relationship*, at the American Crafts Museum in New York City from May 12 through September 4. This upswing is taking place in part because contemporary artists want to escape the inward-looking, market-oriented arena of private galleries, at the same time that representational trends in architecture are making buildings more receptive to integrated works of art. Although the exhibits include a historical survey of this cross-fertilization, it is art objects installed in architectural settings since 1980 that constitute the heart of the show. Recently, notes curator Robert Jensen, such objects created for buildings have gone far beyond simple ornament: "In contemporary architecture, we see immediately and vividly a work of *art*, not a piece of mechanical production. Art is no longer merely a servant of architecture, it sometimes comments on it, even challenges it." To illustrate this interaction, actual artworks are displayed alongside in-situ photographs.

Jensen sees the resurgence of architectural art as springing both from the environmental art movement of the 1970s—many participating artists were already working at an architectural scale—and from the expanded opportunity for artists afforded by percent-for-art programs, which require that a fixed portion of public-works funds be set aside for the incorporation of works of art into new facilities. To integrate their work with the buildings, artists moved away from the typical autonomous sculpture-in-a-plaza formula of the early 1970s. Some started making functional seating, doors, gates—even fully architectural enclosures that are nonetheless unequivocally art (for example, Scott Burton's benches installed at New York's Equitable Center).

The show also illustrates how art can become a self-conscious architectural flourish. Muriel Castanis's *Three Furies*—conventionally representational sculpture but larger for its site than traditional statues—will stand atop John Burgee and Philip Johnson's 580 California Street building in San Francisco as a characteristically Postmodern embellishment. In some cases, art appears even to substitute for architecture: George Woodman, Farley Tobin, and Joyce Kozloff, for instance, have all produced ceramic tile works that cover entire walls of the otherwise utilitarian Detroit People Mover system.



Bruce Miller



Paul Hester

Unsurprisingly, there are also conflicts between artists and architects, and these are best expressed by comments Jensen solicited for the accompanying publication, *A Discourse on Architectural Art*. James Wines blames some artists for not appreciating the intrinsic "publicness" of architectural art. (Jensen says this is because they fear losing their hard-won independence.) Architects, on the other hand, may be resented by artists because most collaborations are, in Rosemarie Haag Bletter's words, "99 percent for architecture."

Not available for viewing by press time are four enclosures installed in the show, each eight feet square, designed and constructed by an artist and architect working together. The collaborators are W. G. Clark and Judith Hanes, Frederick Fisher and Tony Berlant, Peter Waldman and Edward Wilson, and Tod Williams and Mary Miss. Preliminary sketches and statements reveal a continuing ambivalence, even wariness, felt by artists and architects about each other. The subtitle of the museum show—*Affirming the Design Relationship*—aptly suggests that while artist-architect collaborations are here to stay, there is little consensus about where the movement is going. *J. S. R.*

Two works by the artist Albert Paley: detail of Freestanding Architectural Screen, *1983 (top);* Stairway Sculptures *for the Wortham Center for the Performing Arts, Houston, Tex., 1987 (bottom).*



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New strategies for old cities

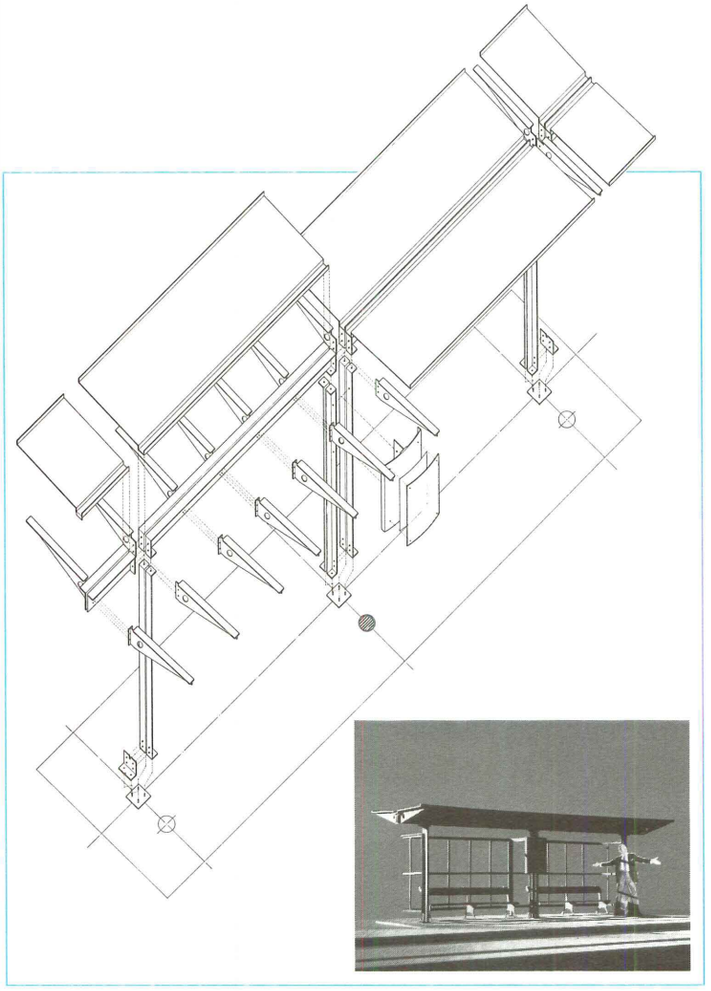
This is the second of two articles on the Remaking Cities conference held in Pittsburgh. The first article appeared in last month's RECORD.

Although platitudes blurred most of the "recommendations" that concluded the conference, many speakers in the plenary and individual sessions offered cogent new analyses of both positive and negative developments in aging cities. Richard Nathan, a professor of public and international affairs at Princeton, described a "bifurcation" of racial problems since the Kerner Commission (on which he sat) issued its report on racial violence 20 years ago. (The commission diagnosed the race riots of the 1960s as stemming from the growth of two separate and unequal American societies: one white, one black.) Nathan observed that civil-rights gains have allowed upwardly mobile blacks and other minorities to move out of the ghettos along with whites. But he has also seen a "hardening" of the underclass even in cities that have enjoyed substantial revitalization. He reported that many cities (Boston, Baltimore, Hoboken, Jersey City) are doing better, but others (Detroit, Newark, Atlanta, Camden, Cleveland, St. Louis) are losing ground.

Lacking a consensus on federal involvement in the plight of cities, conferees embraced "free market" solutions. Linkages between large-scale downtown commercial development and small-scale neighborhood improvements, though controversial, were widely agreed upon as important tools. Mayor Richard Hudnut's strategy for making Indianapolis a developers' hot spot by marketing it as a sports capital was praised as a government adaptation of private-sector competitiveness, while other cities' over-reliance on office-

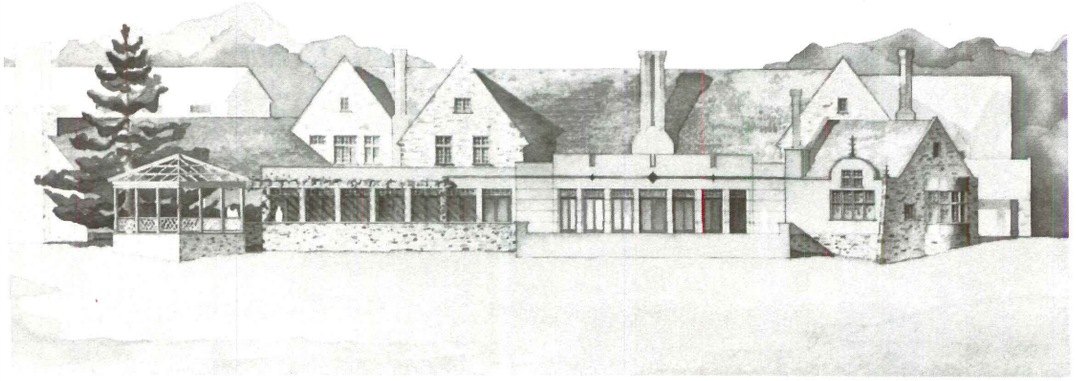
Continued on page 85

Shelters urban and suburban



Readily available bus shelters did not suit the diverse needs of Charleston, S. C., so architects Clark & Menefee have come up with a painted-steel kit-of-parts scheme. The supports are easily fabricated from common steel sections, which are detailed to evoke the rich ironwork tradition of historic Charleston. The roof is of bent and welded plate steel. To save space on narrow city streets, half the roof width shown will be specified; in more spacious suburban areas served by the regional transit agency, a full-width roof and a gridded enclosure—glazed, open, or opaque—can be added (photo). The structure can be lengthened in modules (one stop is expected to require a 40-foot-long shelter), and at any size responds to the region's hot summers (no glass in the roofs) and mild winters (minimal windscreens). After testing a prototype, construction will begin on the first 15 of 30 projected structures.

Aronimink links



An expansion planned for the Aronimink Golf Club in suburban Philadelphia posed special contextual-design problems. The club needed more space, but the self-contained Tudor Revival style of original architect Charles Barton Keen did not lend itself to additions.

The present design by James Oleg Kruehly + Associates distributes new functions over three wings. A porte-cochère, replicating the existing architecture, contains separate reception spaces to allow simultaneous use of the club by members and outside groups.

The ballroom and dining room have been enlarged by projecting a straightforwardly modern volume out of the main block of the 1927 building; a wing enclosing the Men's Grill orients the clubhouse more closely to the golf course. The project is to break ground this summer.

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News briefs

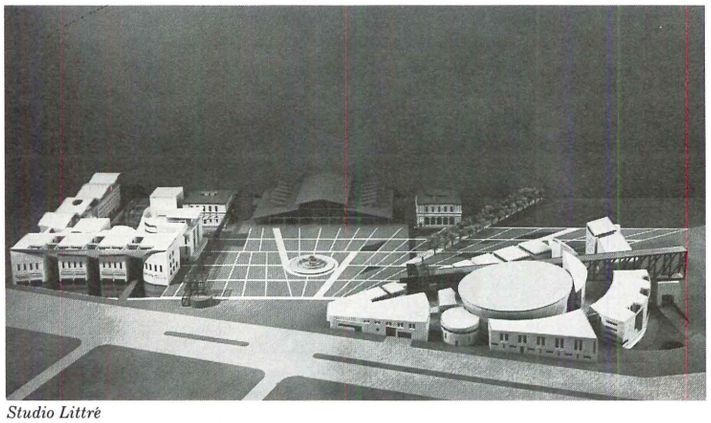
NEOCON 20, the interior products and furnishings exposition in Chicago, will examine international design trends with presentations held in significant local interiors (the Auditorium Theater, Chicago Theater, and Civic Opera House). Running June 14-17, at the Merchandise Mart, the program includes speeches by Balkrishna Doshi, of New Delhi; Josef-Paul Kleihues, of Berlin; Allesandro Mendini, of Milan; Eva Jiricna, of London; and Stanley Tigerman, of Chicago. For a complete schedule, contact Gloria Zylowski at the Merchandise Mart (312/527-7550).

Fumihiko Maki, Giancarlo De Carlo, Richard Meier, and I. M. Pei are all recent recipients of international awards. Maki and De Carlo were jointly given the 1988 Wolf Foundation of Israel prize and will split the $100,000 award. Meier has been presented the British 1988 Royal Gold Medal by Queen Elizabeth. Pei was appointed to the French Legion of Honor for his work on the Grand Louvre.

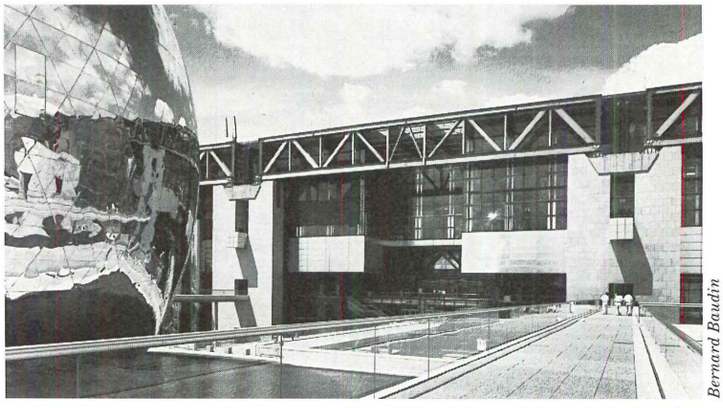
Deconstructivist Architecture, curated by Philip Johnson, will run from June 23 to August 30 at the Museum of Modern Art, in New York. Partisans of Coop Himmelblau, Peter Eisenman, Frank Gehry, Zaha Hadid, Rem Koolhaas, Daniel Libeskind, and Bernard Tschumi will discover whether this exhibition will promote these architects as Johnson's 1932 *International Style* did early European Modernists.

28 Broadway theaters in New York have been designated landmarks in what preservationists see as a rear-guard action to save the theater district from real-estate development. Theater owners plan to file a suit against the city, claiming that landmarking will impair the buildings' commercial viability and prevent alterations for elaborate productions such as the hit *Cats*.

The latest Paris model



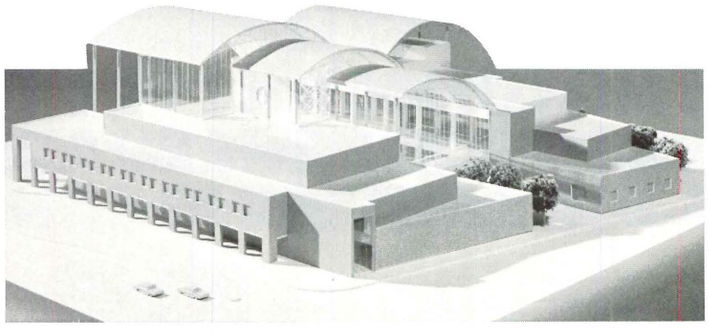
Studio Littré



Bernard Baudin

Having endured continued federal government retrenchment in construction, Americans may envy the nine projects exhibited at the Old Customs House in New York City through May 25. Intended primarily to house cultural activities, the prodigious *Grands Projets* may represent the biggest intervention in Paris since Haussmann. Already completed are the Musée d'Orsay [RECORD, March 1987, page 128] and the Cité des sciences et de l'industrie (bottom photo). Under construction are the Cité de la musique (top photo), Parc de la Villette, the Opéra Bastille, a new headquarters for the ministry of finance, the Institut du Monde Arabe, the Grand Louvre, [this issue, page 142], and the Grande Arche de la Défense. Binoculars will be provided to view the projects in a scale model of the city installed under the Beaux-Arts rotunda of the Customs House.

In flight



Smaller masonry-clad exhibit areas are to cluster around a series of thin metal-deck shells supported by spidery trusses at the 120,000-square-foot Virginia Air and Space Center/Hampton Roads History Center. The high, vaulted spaces will exhibit aircraft and space vehicles exemplifying this region's role in aerospace development. Mitchell/Giurgola Architects with Rancorn, Wildman, Krause & Brezinski have designed the project as part of the redevelopment of the Hampton waterfront; the building will be completed in 1990.

Competition calendar

•The West Coast Gateway competition calls for a "welcoming" immigration monument which is to span the Hollywood Freeway in downtown Los Angeles. Entries are due August 13. For information, write: Christine Morigi, West Coast Gateway, 11300 W. Olympic Blvd., #730, Los Angeles, Calif. 90064.

•The American Society of Architectural Perspectivists invites entries for its annual traveling exhibition of architectural delineation. Submissions are due by June 15. Inquiries should be directed to ASAP, 320 Newbury Street, Boston, Mass. 02115.

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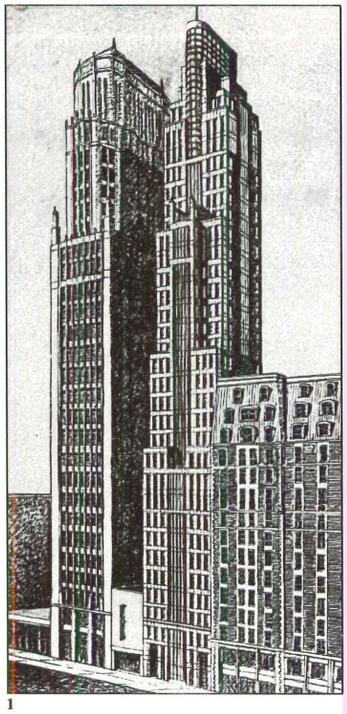
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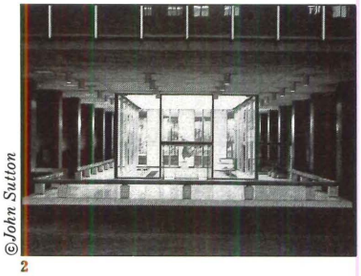
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News briefs



1



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2



3

140 West 42nd Street (1), a 31-story, 125,000-square-foot office tower, is a near twin to its neo-Gothic neighbor, the 1918 Helmle & Corbett-designed Bush tower. Perkins & Will is architect for the new structure, which occupies a mere 5,000-square-foot site.

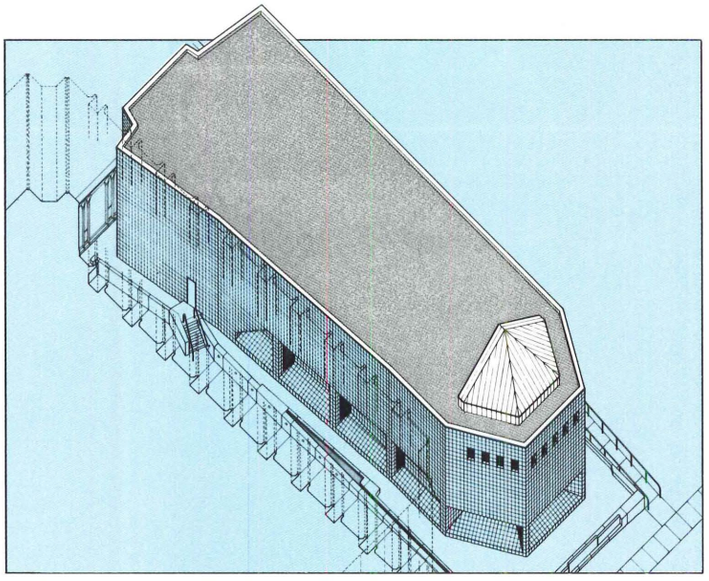
One Bush Street (2), a 1956 office tower designed by Skidmore, Owings & Merrill, is undergoing substantial restoration, although changes to San Francisco's equivalent of SOM's classic Lever House will be invisible, according to architect Kaplan/McLaughlin/Diaz. Updating of the 17-story building will include energy-code compliance work.

The Stonebridge Inn (3), has been rebuilt twice after catastrophic fires in its nearly 200-year existence. The decaying Tiverton, R. I., building will now be restored to its 1860s Queen Anne splendor *and* become part of a 52-unit luxury hotel project. Treatment of two new wings will resemble the historic structure. Architect of the 57,000-square-foot project, which is due for completion next November, is the Newport Collaborative.

James W. Rouse, founder of the Rouse company, was honored by the National Building Museum for his contributions to urban development and planning. Best known as the creator of "festival marketplaces," he is also the developer of Columbia, Md., an influential planned community. His latest venture, the Enterprise Foundation, seeks housing solutions for the poor. The museum will run a retrospective exhibition on Rouse's career through August.

In Context is an exhibit of carpet tiles and fabrics created by leading architects and designers with a hypothetical, historic, or contemporary interior in mind. It can be seen through June 14 at the Interface showroom at the Merchandise Mart, Chicago.

Light touch

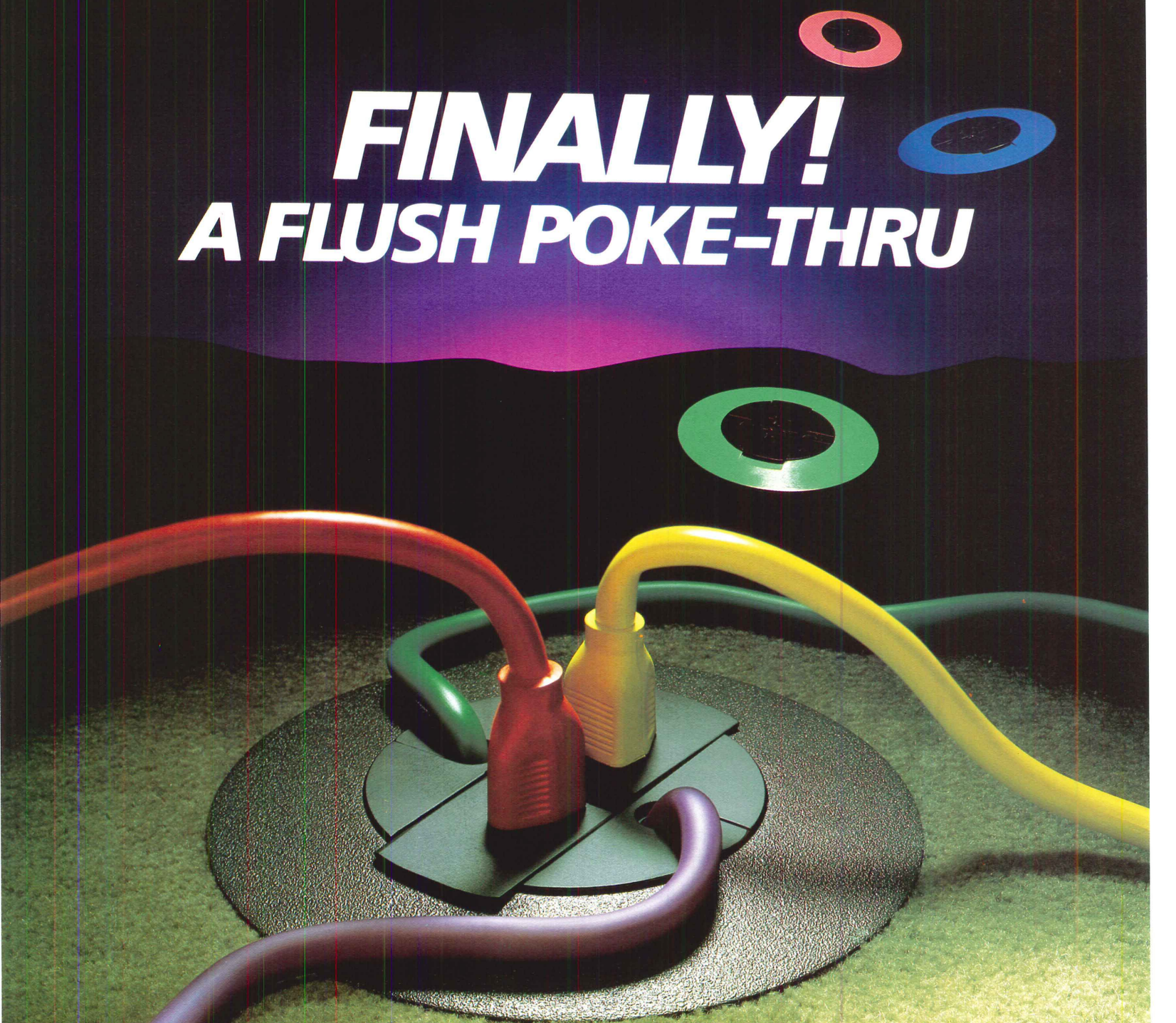


Rather than fill a small, L-shaped site, Gunnar Birkerts and Associates has designed a volumetrically distinct addition to the Conservatory of Music complex at Oberlin College, Ohio. The only esthetic reflection of the assemblage (designed by Minoru Yamasaki in his 1960s neo-Gothic style), appears in Birkerts's gridded white-tile cladding. The new massing is aligned to create a street wall on one side and carved away on the other to diminish the perspective of a narrow alley. Completion of the 20,000-square-foot project is slated for 1989.

Reyner Banham 1922-1988

Reyner Banham, among the most influential postwar critics and historians, died in March. Best known as a champion of such late-modern trends as Brutalism, Metabolism, and High-Tech, he also developed theories on the place of technology in our culture. Born in 1922, Banham first began writing for the *Architectural Review* in 1952. He joined other British artists, architects, and writers in the IG Group, which was critical to the formation of theories of Pop Art and informed Banham's seminal *Theory and Design in the First Machine Age,* published in 1960. *The New Brutalism,* published in 1966, *The Metabolists* (1968), and *Megastructures* (1976) codified emerging trends. A continuing fascination with both pop culture and technology was expressed in *The Architecture of the Well-Tempered Environment* (1969) and *The Concrete Atlantis* (1986). Banham's infatuation with California freeway culture is documented in *Los Angeles: The Architecture of Four Ecologies* (1971). After serving as chairman of the department of design studies at the State University of New York at Buffalo, he taught at the University of California at Santa Cruz.

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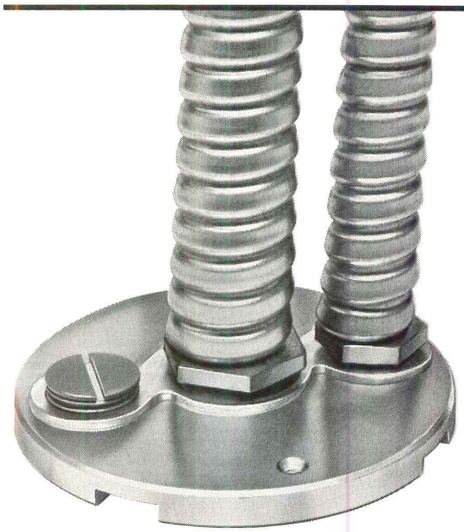
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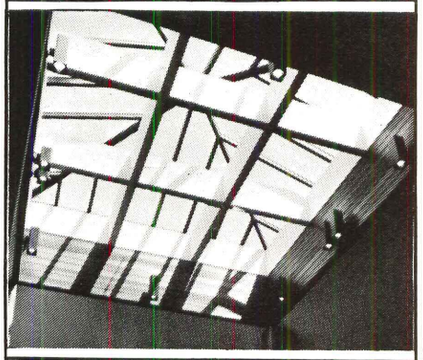
Continued from page 79

building development was castigated (particularly by Robert Wood, secretary of HUD under President Carter) for creating new one-industry towns whose success will be undermined by a combination of overbuilding, changed tax laws, and changing demographics. City-suburb competitiveness, however, was seen as inevitable: "It's war," said urban economist Howard Bell, of Columbia University, in describing New York City's efforts to wrest back-office development from suburban New Jersey.

While nominally addressed to architects, the conference was top-heavy with economists, government officials, and public-policy experts. Speakers repeatedly stressed the essential role of design in creating a vision of transformation that could be "sold" to politicians and to funding sources, both public and private, but few cited specific instances (New York's Battery Park City being one) where design was actually considered critical to the success of a major urban venture. A British contingent, led by RIBA president Roderick Hackney, advocated "from the bottom up" design strategies intended to inspire the citizenry of Britain's hard-hit industrial heartland to take the rebuilding of cities into its own hands. By all accounts, a joint British-American R/UDAT team, which proposed both short- and long-term strategies for four depressed Monongahela River Valley mill towns, successfully demonstrated that the waterway could be reclaimed as an urban and economic asset. The report envisioned a future without steel plants that citizens and politicians could equally embrace. The British proposed holding an annual flower festival as an urban consciousness-raising strategy—an idea that a local cartoonist parodied with the image of a burly steelworker gathering armloads of blossoms. The proposal was nevertheless accepted in good humor by area residents because—confirming the crucial ingredient of each successful project described at the conference—this was the first time outside consultants had asked *them* what their valley's future should be.

J. S. R.

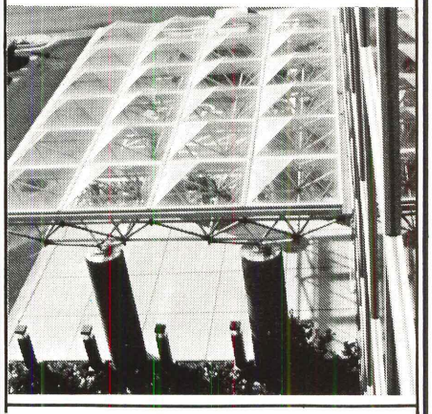
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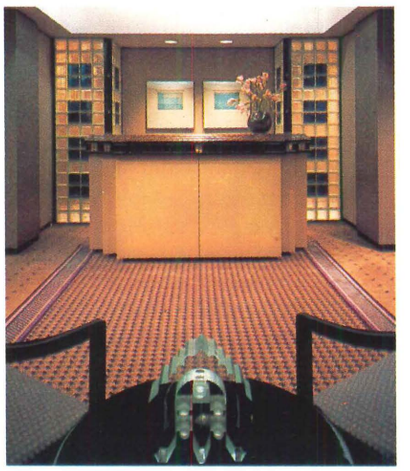
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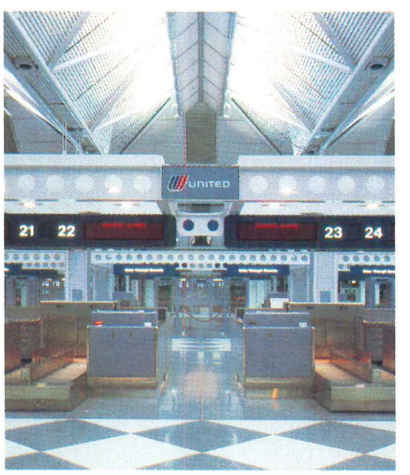
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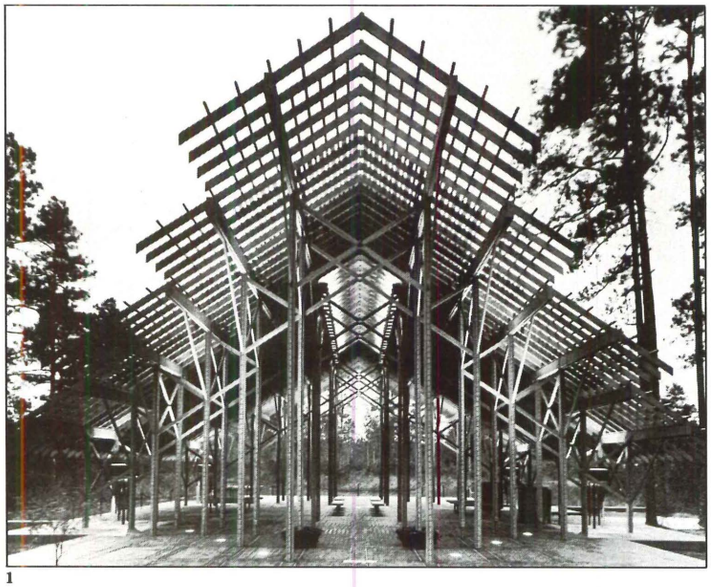
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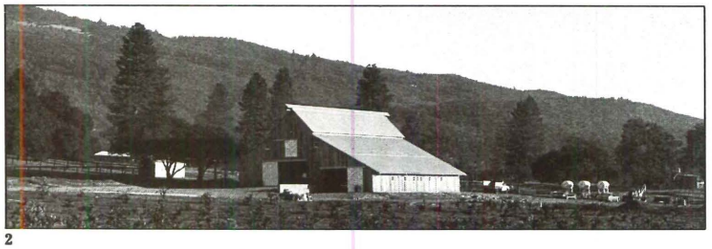
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Design awards/competitions: American Wood Council 1987 Nonresidential Wood Design Awards

Two projects at Seaside, the widely praised second-home development in Point Washington, Florida, were among six recipients of American Wood Council Awards. William Tillman Cannady, of Houston; Doug Kelbaugh, of Seattle; Melanie Taylor, of New Haven; and Mark Simon, of Essex, Connecticut, composed the jury.



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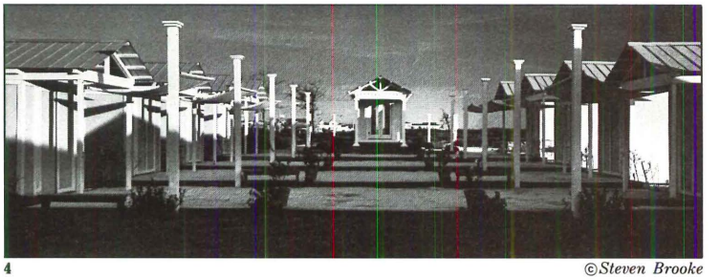


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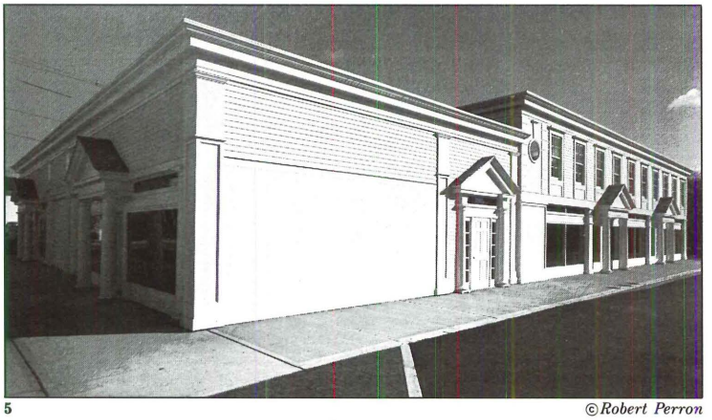


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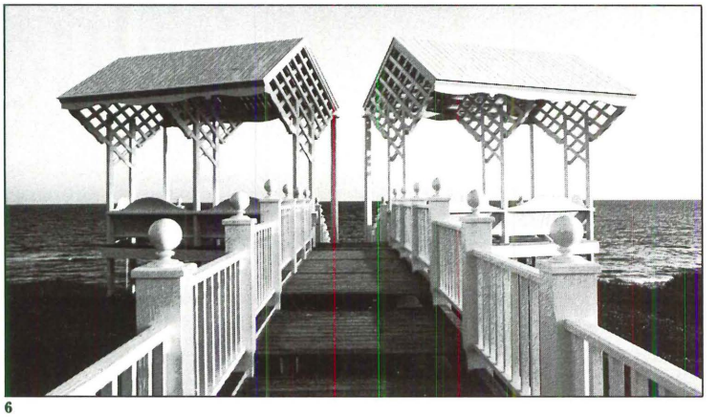
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4 ©Steven Brooke



5 ©Robert Perron



6

1. Pinecote, Picayune, Miss.; Honor Award; Fay Jones and Maurice Jennings, Architects. A shelter for reflection and gathering is the focus of a 64-acre pine-savannah arboretum. Rising from dense, geometric framing, a stepped roof opens to delicate tracery, a deliberate metaphor for organic growth. The jury called the structure "enormously satisfying in its economy, richness, and integrity."

2. Atwood Barn, Glen Ellen, Calif.; Merit Award; Dutcher and Hanf, Architects. Narrow clerestories light this heavy-timber-framed barn in the California wine country, praised for its "authentic spirit." Horse stalls, a work area, and storage are accommodated on two levels, which, because of a sloping site, are both accessible at grade.

3. Mathematical Sciences Research Institute, University of California, Berkeley; Citation; Shen/Glass, Architects. Among the Bay Area's largest wood-frame structures, this 22,000-square-foot academic building on a steep site encloses a central daylit atrium with research and administrative offices, a lecture hall, seminar room, and library. The jury commented: "A handsome, larger-scale building that manages to hide a complex series of environmental and economic limitations behind pragmatic applications of wood."

4. Per-spi-cas-ity Market, Point Washington, Fla.; Merit Award; Deborah Berke, Architect. Eight small pavilions frame a central court for this open-air seasonal boutique market close to the beach. Jurors lauded it as a "formal space with civic overtones."

5. Whitfield Square, Guilford, Conn.; Merit Award; Jackson & Page, Architects. An existing 13,500-square-foot structure was renovated to complete the enclosure of the Guilford village green in the prevailing style of traditional New England architecture. The jury cited this retail/office project as "exquisitely done, both dignified and inventive in its use of the classical vocabulary."

6. Ruskin Street Beach Pavilion, Point Washington, Fla.; Merit Award; Stuart Cohen & Anders Nereim, Architects. This bathhouse/belvedere/dune walkover was hailed as "flamboyant, whimsical, and fun." Outdoor showers and storage are located on the shore side of the structure, while a 170-foot-long walk bridges the dunes.

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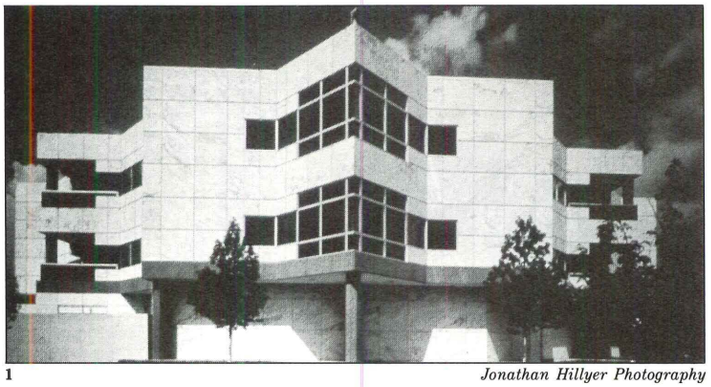
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Tennessee Society of Architects/AIA 1987 Design Awards

A jury of four Atlanta architects selected projects ranging from a 12-unit residential development to a 205,000-square-foot computer facility to receive Design Awards of Merit in the 1987 awards program of the Tennessee Society of Architects. G. Geddes Dowling, of Dowling Architecture; Barbara S. Crum, of Nix, Mann and Associates; Richard Dagenhart, of Georgia Tech; and John T. Plaxco, of Thompson, Ventulett, Stainback & Associates, participated in the panel.



1 *Jonathan Hillyer Photography*



2



3 *Eric A. Good*



4

1. HCA Data Center, Nashville; Gresham, Smith and Partners, Architect. Computer operations are confined to two windowless lower levels so that workers can take advantage of daylight and views in the upper levels of this marble-clad structure. "A bold, strong image," commented the jury, which noted that the building is "well organized around an atrium."

2. Chickasaw Bluff Cooperative, Memphis; Looney, Ricks, Kiss, Architects. Although banded articulation and metal railings refer to neighboring railroad warehouses, a gable roof and deeply recessed glazing affirm the domestic character in this 12-unit residential development overlooking the Mississippi River. The jury lauded this first commission for a young office as "a cut above" other residential projects considered.

3. Market Square, Knoxville; Bullock, Smith and Partners, Architect. In the redesign of Knoxville's downtown square, a stage shell focuses a system of walkways, landscaping, and fountains. Details of a demolished 19th-century market shed are recalled in the new shelter, which also houses a historic bell from the razed structure. The jury praised "the good, strong image" of the project, and found it to be the kind of place "where people would like to spend time."

4. Evergreen Plaza, Memphis; Looney, Ricks, Kiss, Architects. This small-scale commercial renovation "shows that it is not always necessary to have a big budget . . . for award-winning architecture," according to the jury. A series of storefronts in a historic neighborhood were restored to their original state.

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Books

Le Corbusier: Ideas and Forms,
By William J. R. Curtis.
New York: Rizzoli, $35.

Reviewed by Roger Kimball

It was only to be expected that the centenary of the birth of Le Corbusier last year would witness the appearance of all manner of tributes to the master. And it was likewise to be expected that the quality of these multifarious tributes would vary widely, with the banal and the hagiographic by no means being underrepresented. It is therefore with some gratitude that one turns to William J. R. Curtis's book. Surely one of the most thoughtful studies of the architect to emerge in recent years, Curtis's book is part intellectual and artistic biography, part architectural history and criticism. It bears the title it does, Curtis remarks, because "it is concerned above all with the ways in which the architect compressed many levels of meaning into his individual buildings . . . . Their vocabulary cannot be understood apart from Le Corbusier's activities as a painter, sculptor, urbanist, and writer; nor apart from his attitudes to society, nature, and tradition." In detailing these personae, Curtis provides a comprehensive portrait of the intellectual and spiritual obsessions that guided Le Corbusier's work.

Scrupulously researched (Curtis is an architectural historian who has taught at London's Courtauld Institute, Harvard, and elsewhere), the book lives up to its claim to provide a synthesis of current scholarly thinking about Le Corbusier. Curtis's observations on individual buildings evidence familiarity with the available documentation and have the freshness and immediacy that intimate first-hand acquaintance provides. While there is no doubt that Curtis regards Le Corbusier as one of the formative artistic giants of the century—comparing his influence to that of Freud, Joyce, or Picasso—he never descends to hero worship and never loses sight of what he delicately terms in one place "the tensions between the ideal vision and the constraining reality" in Le Corbusier's work. The architect's carelessness about finishes and materials, his often questionable (and highly erratic) politics, the "dictatorial" aspects of his urban planning—all this Curtis registers fully and frankly without letting it dim his conviction that "it is impossible to understand architecture in the 20th century without first coming to terms with Le Corbusier."

Curtis seeks to reach behind the accumulated interpretative clichés and familiar formal devices of Le Corbusier's architecture to the constant principles that animated his greatest work. In large part, his aim is to correct the simplistic view of Le Corbusier as the prophet of mechanized Modernism: the functionalist revolutionary who specialized in designing pristine white cubes, bombastic urban utopias, and who blithely declared that the house was a *machine à habiter*—a machine for living in. As Curtis observes, "The role of 'modern master' cast for Le Corbusier by early historians of modern architecture never did justice to the formal and metaphorical complexity of his work. It excluded vast areas of his historical imagination, his regionalist and classicizing formative works, the primitivism of his middle years, and the ideological contradictions of his urbanism." The Le Corbusier who emerges from these pages is altogether a more complicated figure than the textbook architectural iconoclast.

More complicated and, it must be said, more elusive. Curtis interweaves the story of Le Corbusier's life with an account of his art, chronicling biographical details, from his birth as Charles Edouard Jeanneret in 1887 in the provincial Swiss town of La Chaux-de-Fonds, through his early infatuation with the Arts and Crafts movement and a Ruskinian estheticism; he recounts the architect's many formative travels, especially to the Ottoman Empire, Italy, and Greece, and his apprenticeship with Peter Behrens in 1911; he reminds us of Le Corbusier's permanent move to Paris in 1916, his involvement a few years later with the avant-garde impresario Amédée Ozenfant, and the definitive emergence of Le Corbusier's mature post-Cubist modernism, appropriately signaled by his adoption, at Ozenfant's suggestion, of the soubriquet Le Corbusier when they began publishing the journal *L'Esprit Nouveau* together in 1920. In all this, Curtis proceeds with meticulous care, though in truth the

Continued on page 92

Roger Kimball writes for The New Criterion, The London Times Literary Supplement, Commentary, *and other publications.*



"We discussed many facets about the use of inner space, Mr. Farber, but you never mentioned going out regularly to walk the dog."

Continued from page 91

biographical parts of his book are the weakest. Curtis writes with admirable clarity about Le Corbusier's ideas and intellectual sources, but he fails to make the man himself come alive. No doubt this is due in part to Le Corbusier's tremendous reserve: especially in his early years, there is not much record of a "personality" to narrate.

But whatever the reasons, Curtis is at his best when discussing the *ethos* of Le Corbusier's work, its underlying esthetic ambitions and effort to achieve the kind of timeless architectural presence that he so admired in certain Classical buildings. He is especially good on the great villas of the 1920s and early 1930s, and on Le Corbusier's deep meditation on the Western architectural tradition, especially as expressed by the monuments of Classical Greece. On an early visit to Greece, for example, Le Corbusier went to the Parthenon every day for three weeks, looking, sketching, absorbing, wondering. As Curtis notes, "the Parthenon embodied an elusive absolute that would continue to haunt him for the rest of his life."

Le Corbusier aimed to do for our time what the Greeks did for theirs: articulate the essential spirit of the age. It was in this sense that Le Corbusier's modernism owed as much to tradition as it did to a vision of the future. For him, Curtis writes, "The adventure of modernism was that it allowed one to portray an ideal future *and* return to roots." It may be that Le Corbusier failed to realize his vision of a permanent architecture, an architecture beyond what he castigated in *Vers une architecture* as "the various 'styles'." But as Curtis eloquently shows, Le Corbusier succeeded in his heroic effort to transcend the vagaries of architectural fashion and to establish himself as a modern genius of classical stature.

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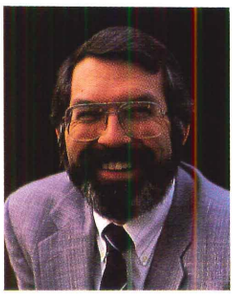
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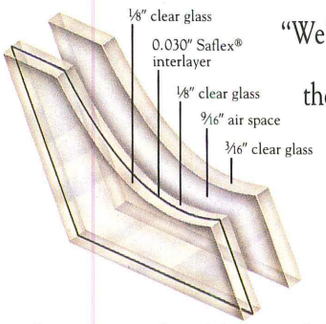
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John Minden, AIA
GMS Architectural Group
Bellevue, Washington



Architect's rendering of Victorian Apartments in Seattle, Washington.

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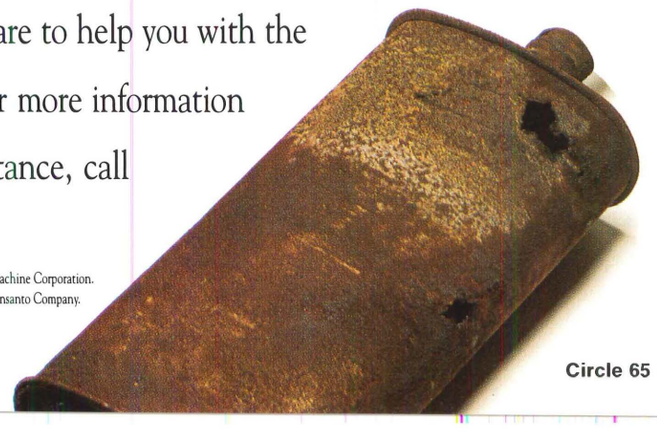
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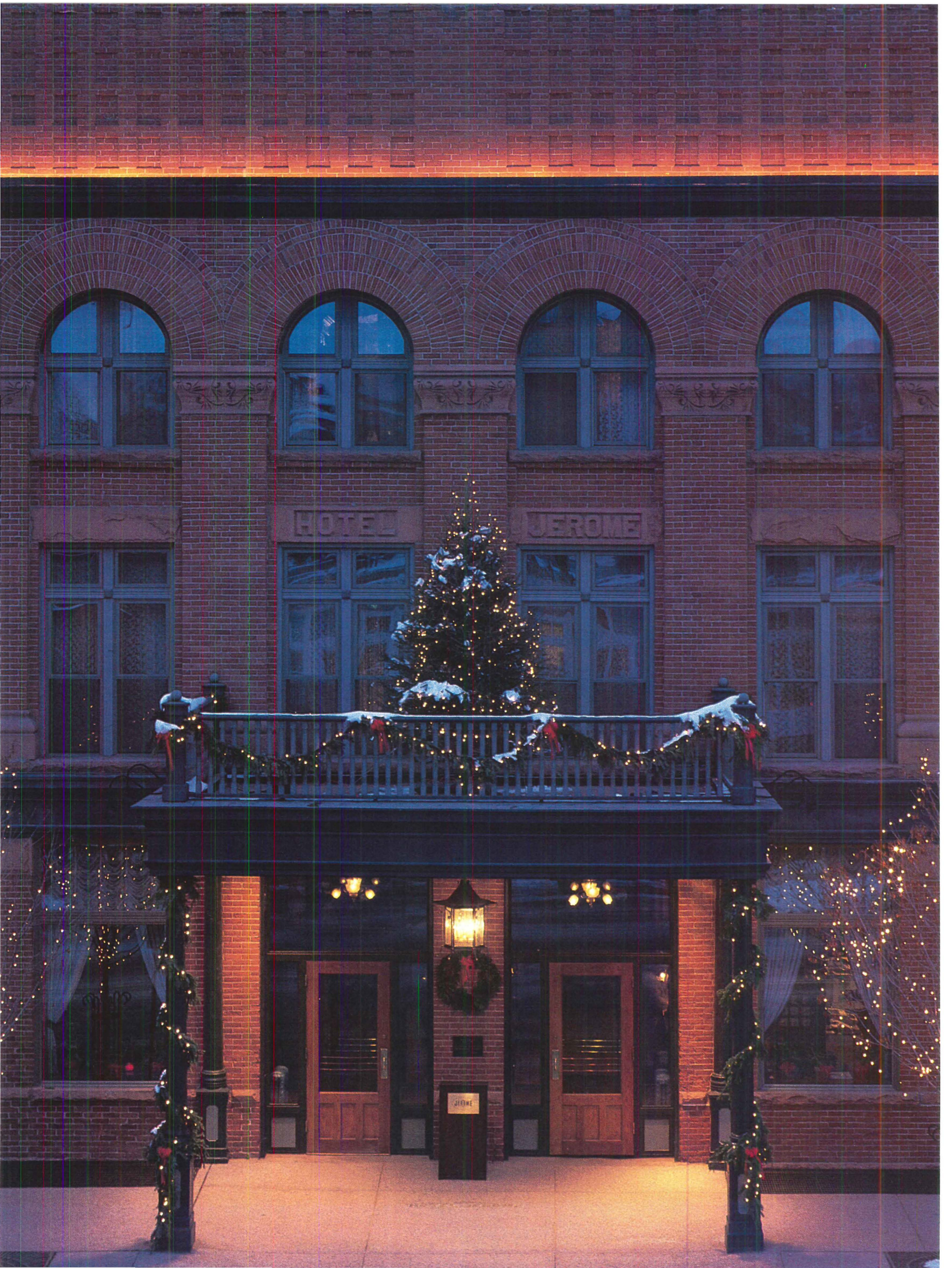
AR 588

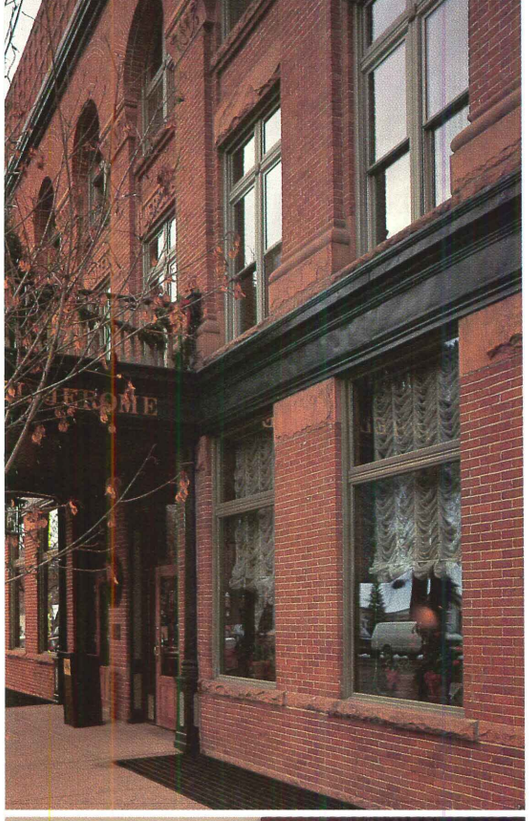
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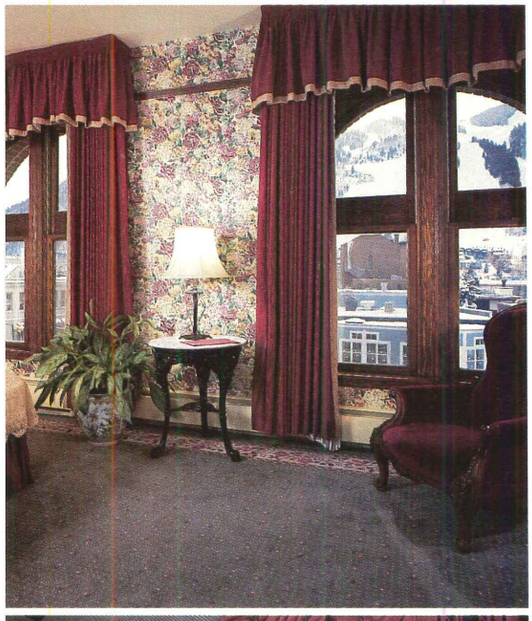
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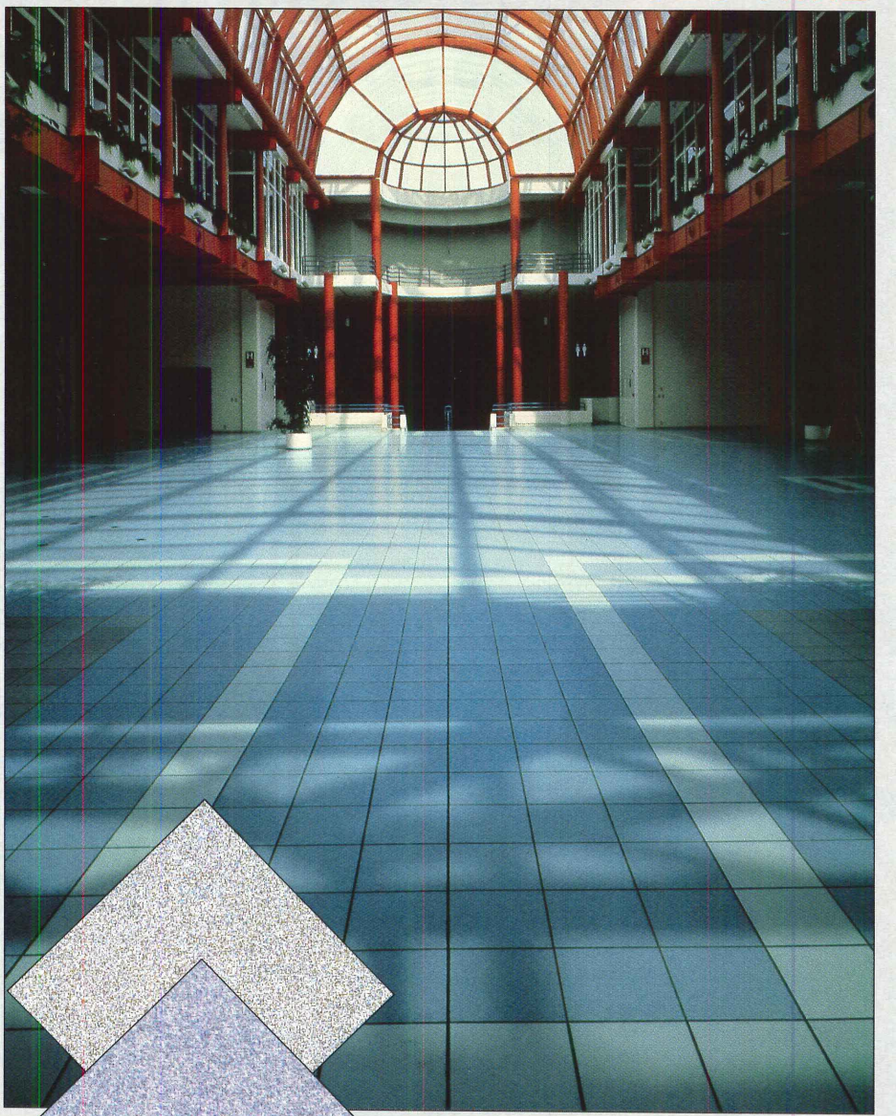
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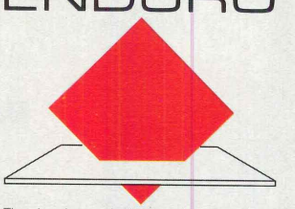
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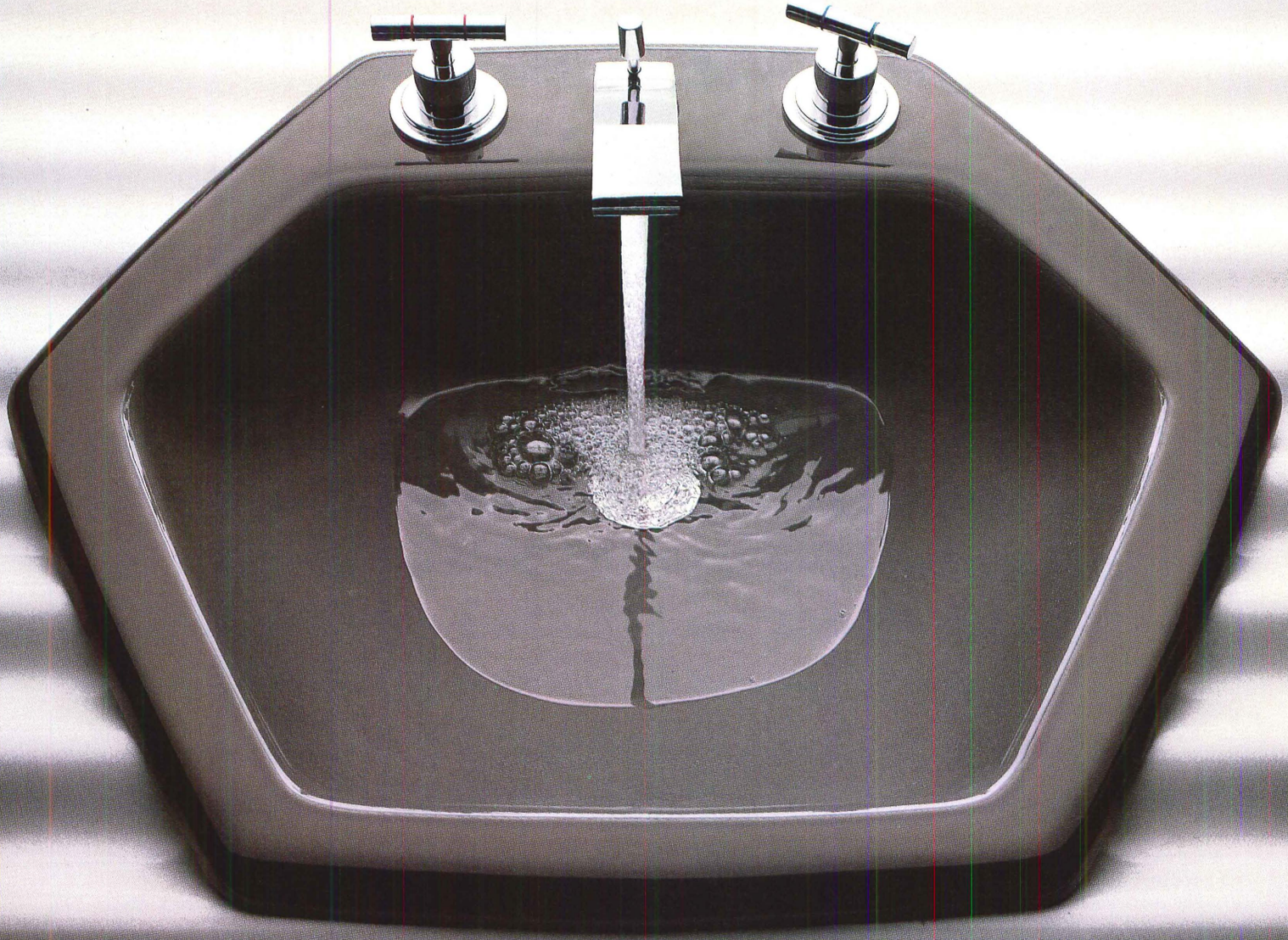
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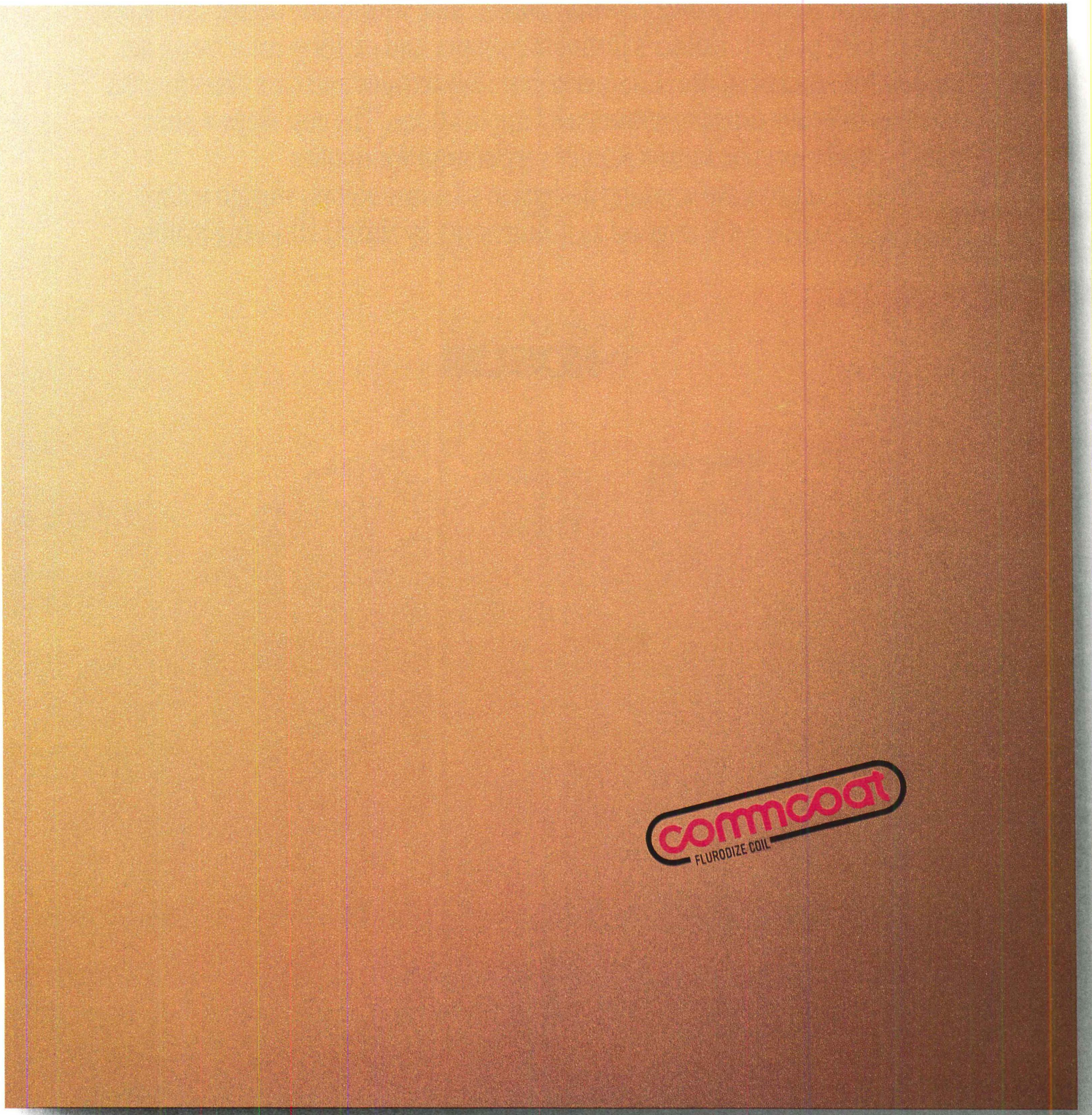
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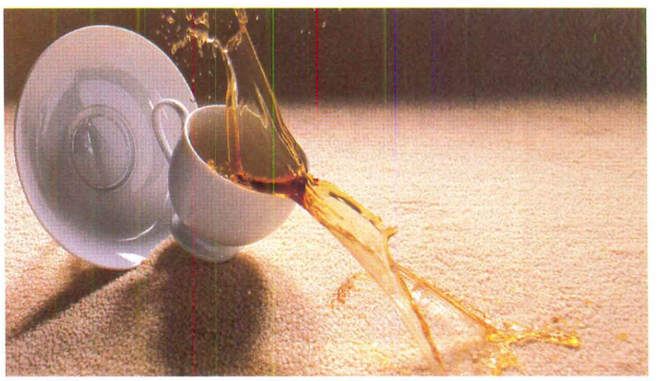
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The Problems



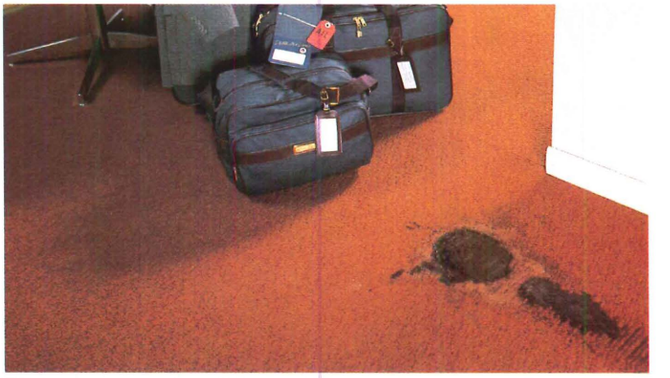
Stains from hot coffee.



Color loss from strong light sources.



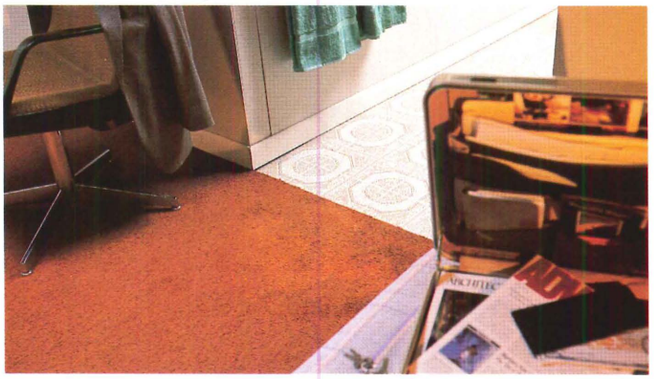
Stains from wine.



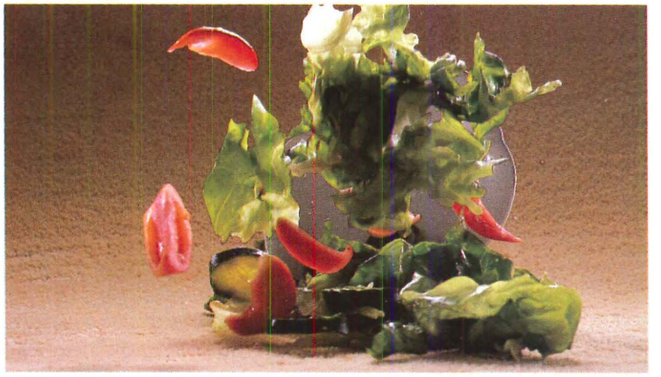
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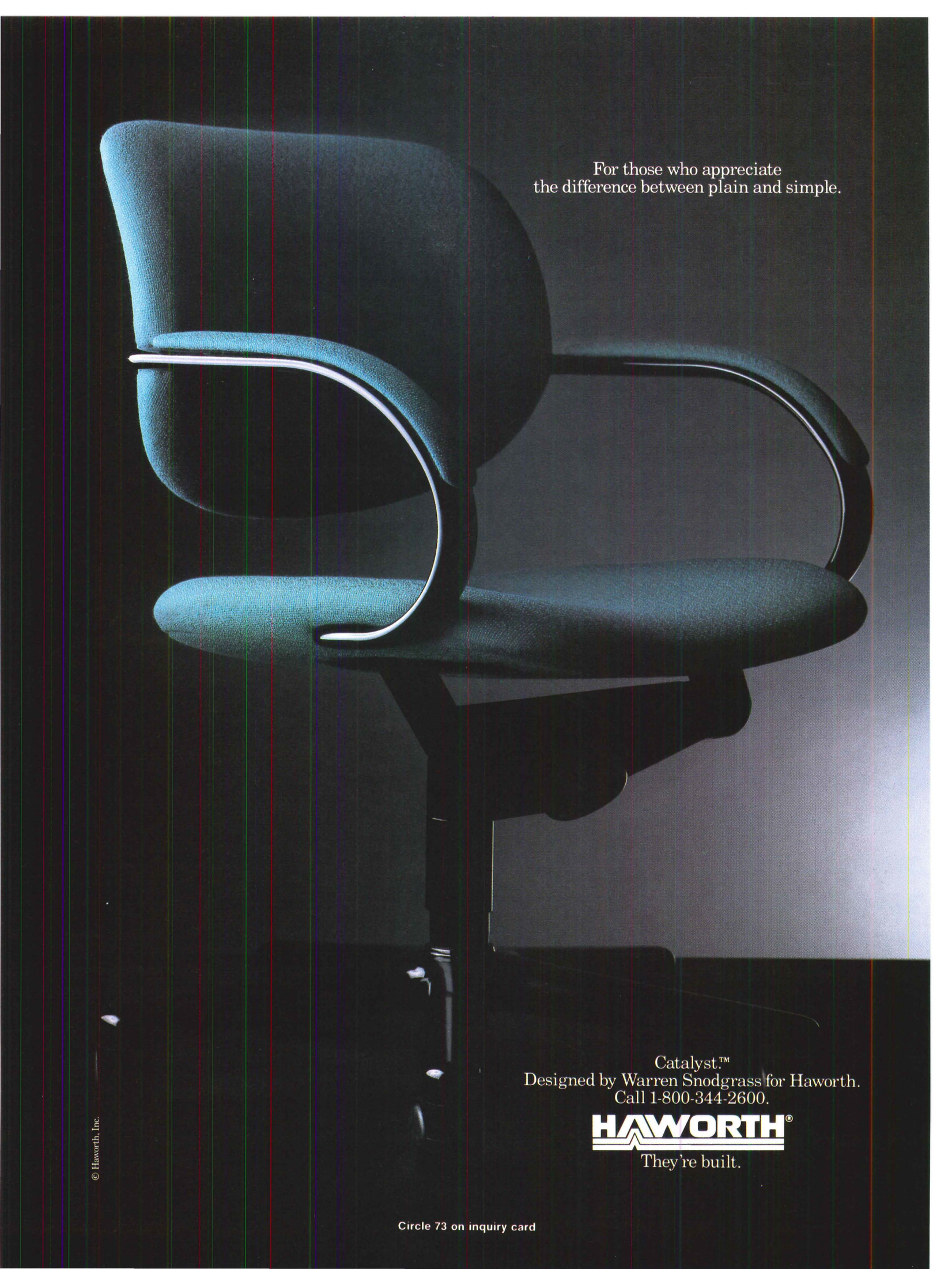
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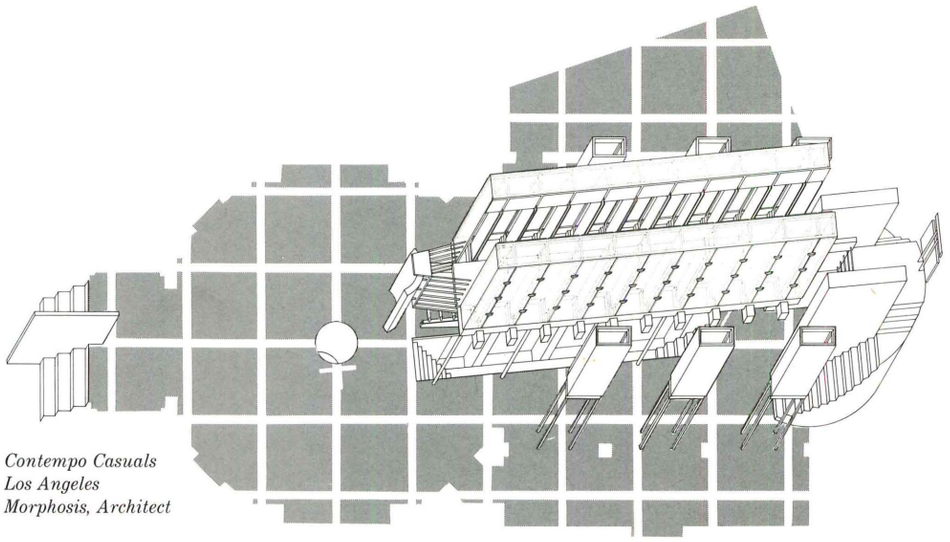
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In this issue

"Most architects get nervous, and not unreasonably so, when their work is compared to fashion," begins the introduction to our Building Types Study on interior design for apparel retailers. Whether or not architects are comfortable in the service of a fickle decorative art (a type of collaboration that long predates Postmodernism's revival of ornament), their work can obviously play a major role in seizing the right moment to enhance or define the contemporaneity of a manufacturer's image. The owner of each of the three shops included in our portfolio saw the selection of a high-profile designer as a strategic move in its own marketing plan — a choice expressed dramatically in the installation designed by Morphosis for the Contempo clothing chain (drawing below and page 132), and those by Mark Mack for Bogner (page 136) and by Robert A. M. Stern for Mexx (page 138). A separate feature article in this issue on Mexx International's company headquarters (page 106), also by Stern but cast in a very different mode for a very different program, underscores how one client may utilize design to distinguish its corporate culture from the saleable "lifestyle" it projects in public.

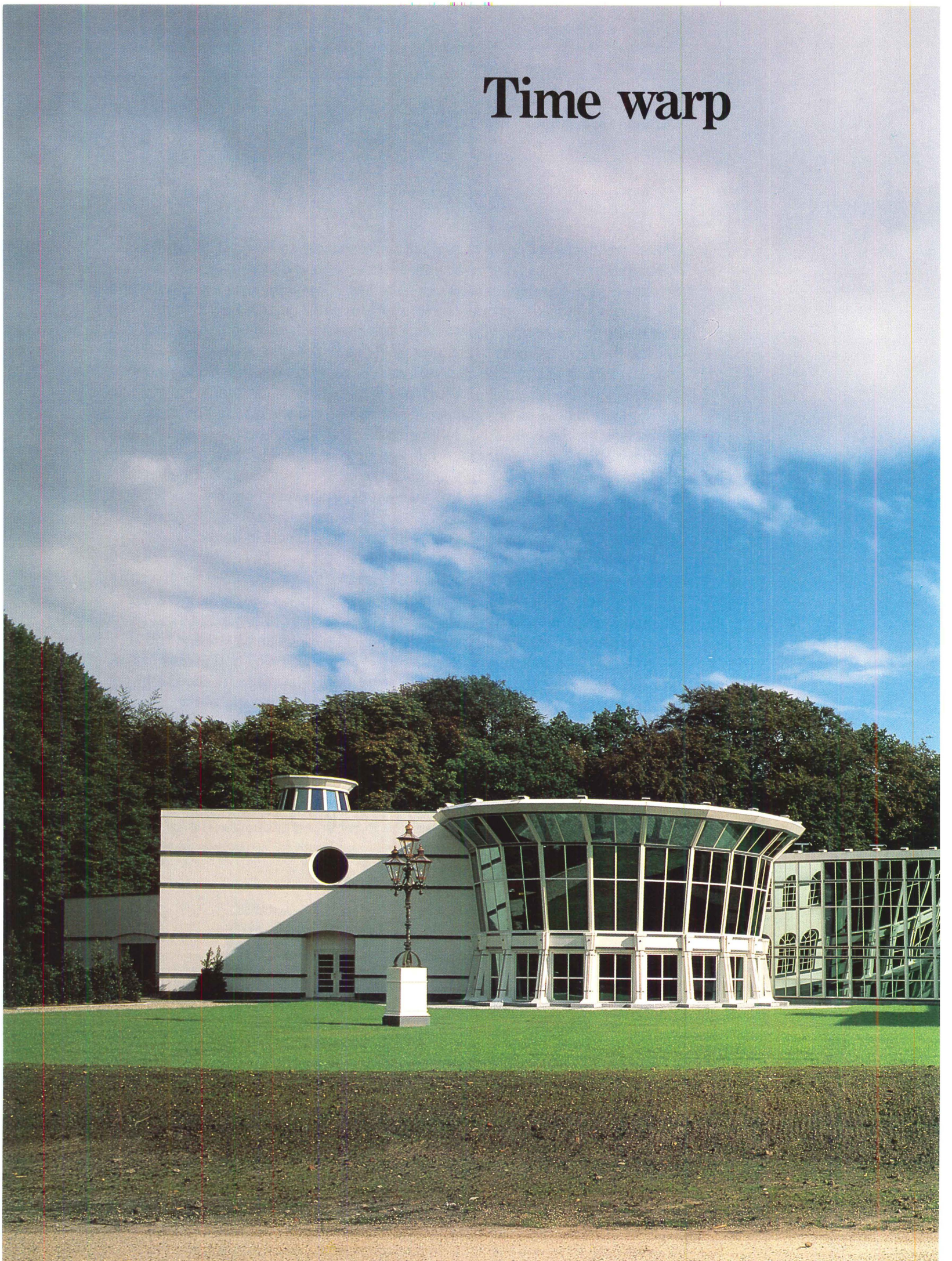
Where more durable values are at stake, the comparability of architecture to fashion suddenly wears thin. Look, for example, at our profile on the North Dade Justice Center, designed by Arquitectonica (page 122). Though the dynamic Modernist esthetic of the Florida building is a far cry from the traditional temple-front American courthouse, it embodies no less serious an attempt to translate basic social tenets into structure with a lasting presence of its own. Questions as to whether such a building is in or out of style are irrelevant to its success in accomplishing its mission. This point applies even more clearly to the subject of another feature this month: an analysis of the sometimes arduous process whereby two California firms faithfully realized a project that was started by Louis Kahn but developed only as far as schematic drawings before his death in 1974 (page 114). Is the result "dated"?

Our cover story on additions to the Louvre Museum by I. M. Pei and Partners—a venture known worldwide simply as The Pyramid—anatomizes the up-to-date technology behind the reemergence of a form which, in its earliest incarnation, millenia ago, symbolized eternity itself.



Contempo Casuals
Los Angeles
Morphosis, Architect

Time warp





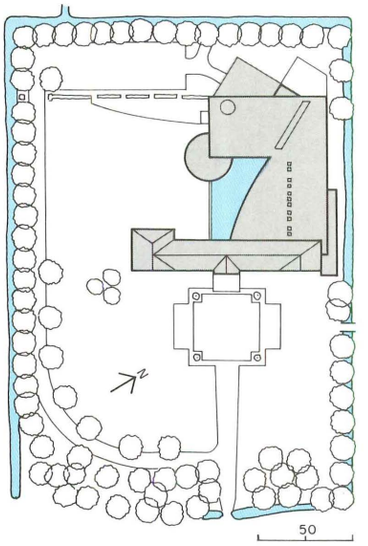
Mexx International
Headquarters
Voorschoten, The Netherlands
Robert A. M. Stern Architects

In his transformation of a 19th-century factory into a Dutch fashion company's headquarters, Robert A. M. Stern tailored an eclectic range of 20th-century precedents into the very model of corporate modernity.

©Peter Aaron/ESTO







In creating a 60,000-square-foot headquarters for Mexx International, Robert Stern preserved the symmetrical Dutch Renaissance Revival facade of a former silver factory (top). The asymmetrical wing he attached to the rear of the 1850s building incorporates the exteriors of two 1950s additions (top and right side of plan). The polygonal restaurant and curved atrium of the new extension (above and opposite) are flanked by a pool to increase the amount of daylight reflected inside.

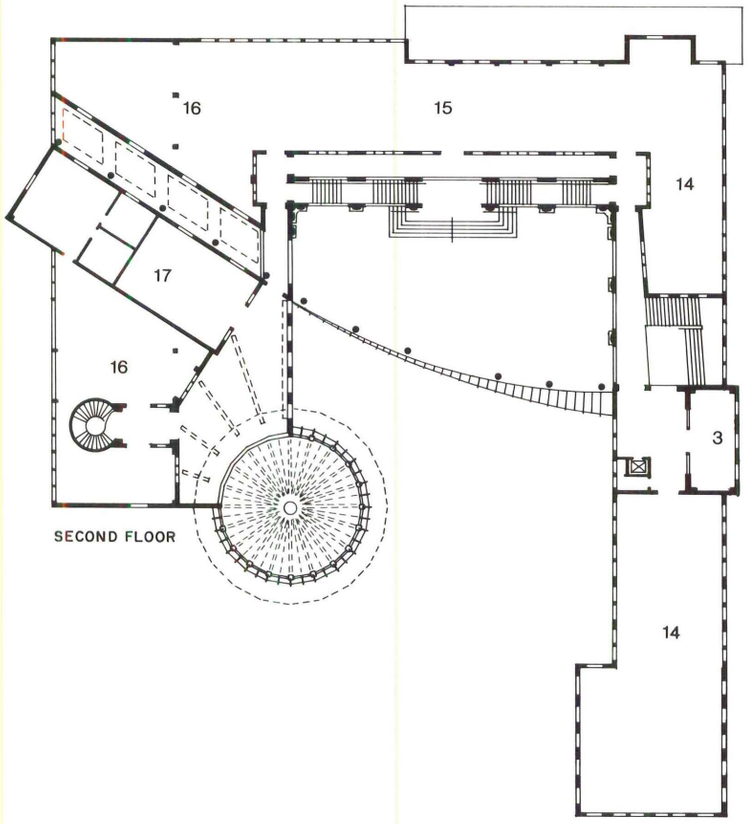
Mexx International presented Robert A. M. Stern with a commission perfectly suited to his well-known historicist sensibility. Seeking a traditional image for its corporate headquarters in Voorschoten, a town near The Hague, the eight-year-old clothing company requested the architect to renovate and expand a former silver factory designed in the Dutch Renaissance Revival style (top left). But instead of predictably imitating the 1858 landmark's Palladian plan and Classical vocabulary in a subservient addition, Stern boldly interposed a new wing of steel and glass onto an existing 1950s extension. A *Modern* design by one of the world's most recognized Postmodern architects? "I wanted to create a more natural history for this complex, which jumped in date from the mid-19th century to the mid-20th, by creating a series of fragments that appeared built over time," he explains. In other words, Stern's quick embrace of the Modern Movement does not signal a fundamental change from his signature eclecticism: his borrowing from the past has merely broadened in scope to include more recent examples. He credits his renewed interest in the "Classical firmness" of the early International Style to visits to West Berlin, where his housing project for IBA is now under way. "Although Modernism in Europe can be every bit as revolting as it is here, it never seems quite as disastrous there because of its small scale, which leaves the remaining historic cities intact."

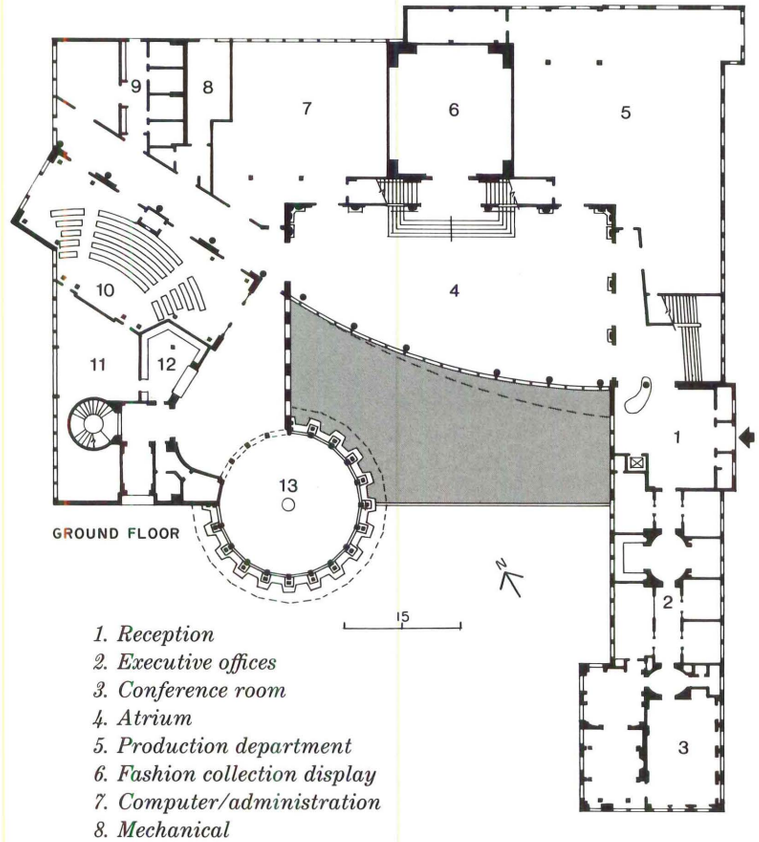
Approaching the Netherlands site with characteristic regard for context, the architect composed a stylistic pastiche that he feels particularly encapsulates "the mad, insane quality of Dutch Modernism that Rem Koolhaas personifies." The undulating curtain wall and flared drum of the Mexx addition—framed by a stuccoed wall that repeats the arched openings of the turn-of-the-century factory (top left)—recall the playful, quirky designs of Dutch architects practicing in the 1920s and '30s, such as Sybold van Ravesteyn, Johannes Duiker, and the team of Michiel Brinkman and Leendert Cornelis van der Vlugt (whose van Nelle tobacco factory Stern found especially powerful). If the double-curved glass wall, oculus-studded striped facade, and conical skylight of the Mexx headquarters also call to mind recent work by James Stirling, Stern is the first to point out the resemblance. "I have always admired Stirling as an architect, but I've seldom admired his buildings—until I saw the Neue Staatsgalerie, in Stuttgart, which is such an incredible piece of architecture."

Stern carried the forceful eccentricity of his asymmetrical composition indoors to define a spatial hierarchy that echoes the Modernist spirit of the exterior in promoting ample daylight and staff interaction. To the north side of the preserved factory, he swung a glass arc to form an "atrium" that accommodates seasonal fashion shows and serves as the building's "social condenser." Its glazed wall curves back into the heart of the complex, leading to a skylit "street," which activates the block of studios and meeting rooms at the rear. At the southeast corner, a light-filled, circular volume dramatically supported by a single central column houses the employees' restaurant, a hybrid of Modern abstraction, Art Deco Classicism, and 1950s kitsch that radiates an optimism rare in the 1980s. "The great Modern architects of the 1920s, trained in Classicism, always entered into a dialogue between traditional rules and a new sensibility," asserts Stern. In conducting a similar exchange at Mexx, he addressed the preservationist's dilemma of "sympathetic" design in a strong and resonant voice. *Deborah K. Dietsch*









1. Reception
2. Executive offices
3. Conference room
4. Atrium
5. Production department
6. Fashion collection display
7. Computer/administration
8. Mechanical
9. Exercise room
10. Distributors' meeting room
11. Storage
12. Kitchen
13. Restaurant
14. Fashion design
15. Fabric design
16. Retail design
17. Graphic design

To recapture the communal spirit of Mexx International's previous headquarters, a small Dutch villa centered around a three-story stairwell, Robert Stern activated his addition with spacious circulation zones. The social hub of the new complex is a great hall (opposite and below), clad in a curtain wall angled for maximum daylight. Paved in terrazzo with radiant floor heating, the glass "atrium" with its grand staircase and torchère uplighting serves as a backdrop to public events such as seasonal fashion shows.



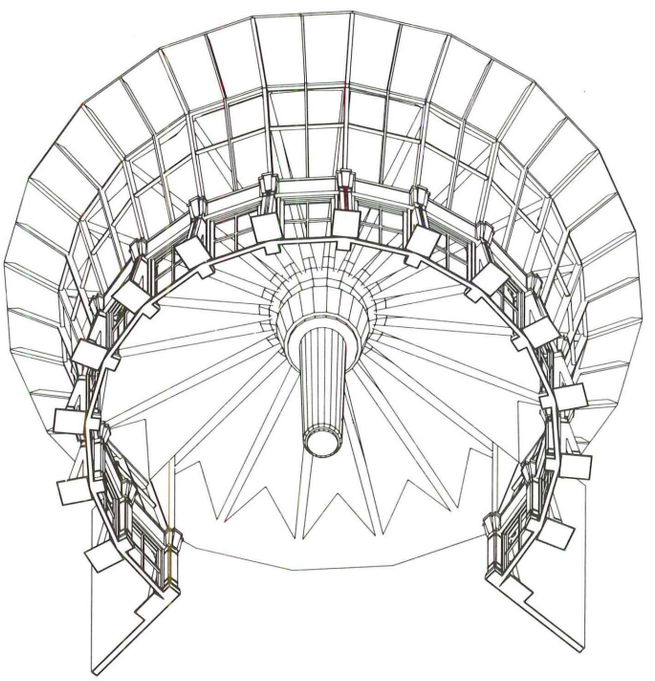


"We view the Mexx headquarters as a global village," says project architect Graham Wyatt, who likens the double-height, skylit passage at the western end of the atrium to a narrow European street (above). Slicing through the deep block of studios, offices, and meeting rooms at the back, the corridor encourages contact between designers in second-floor studios, who can communicate through open casements. Eventually, the street will lead to more offices in a rear extension, now being designed by Stern.

Mexx is an acronym that combines the initials of two clothing companies previously owned by its founders—Moustache for Him (M), Emanuelle for Her (E)—and two symbolic kisses (XX). Like the American fashion company Esprit, the Netherlands-based conglomerate prides itself on design savvy, but is also sensitive to the conservative nature of corporate business. "I didn't want our headquarters to be as trendy as our clothes—a Sottsass monument—but to convey a sense of history," claims Rattan Chadha, Mexx's president. "I was also dreaming of Radio City Music Hall." In fulfilling his client's request for tradition and fantasy, Stern restored the ground floor of the 19th-century building with neo-Baroque plaster vaults (opposite, top) and furnished the executive offices beneath them with Art Deco-inspired accouterments, such as ebony-trimmed pilasters and custom-designed maple furniture (opposite, bottom left). The atrium is framed by uplights of ebonized Miranti and etched plexiglass (bottom right). Stern introduced natural illumination wherever possible through generous windows and skylights, such as the conical lantern crowning the staircase buried within the rear wing (top right). Daylighting in the employees' restaurant is augmented by uplights around the perimeter and fixtures behind the wood-screened column capital, which also houses acoustic panels (opposite, bottom right). The central column supports light steel beams that form the rotunda's sawtooth ceiling (axonometric). The dining tables were designed by Stern, the chairs by Philippe Starck.

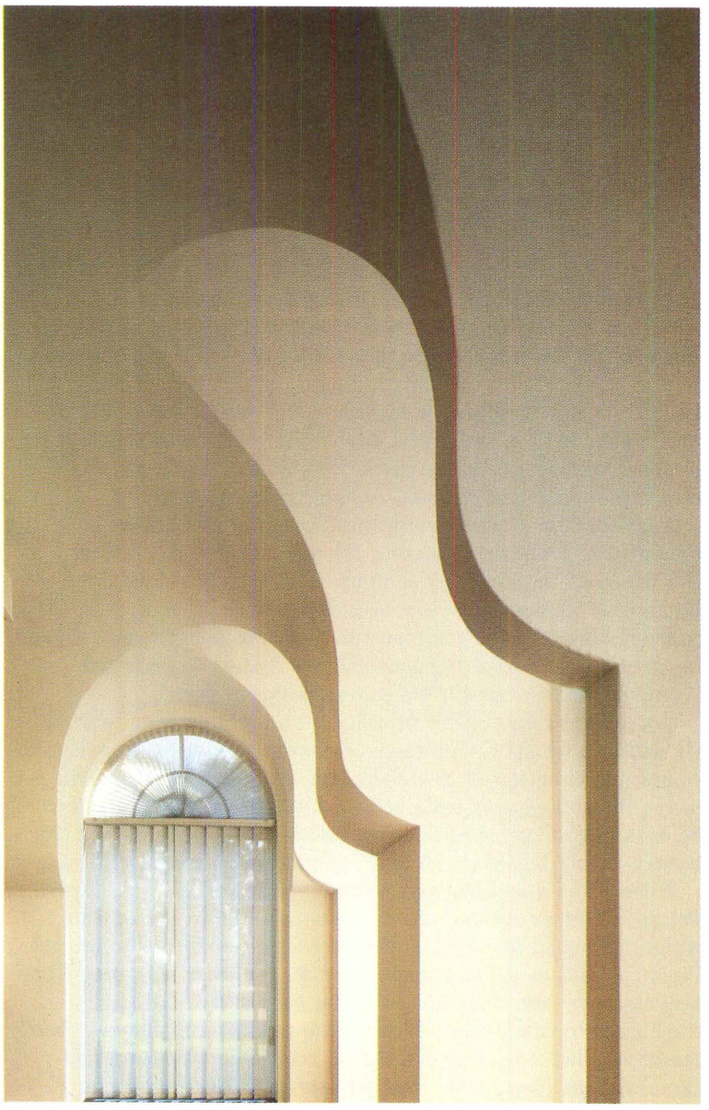
Mexx International Headquarters
Voorschoten, The Netherlands
Owner:
Mexx International, B. V.—Dick Catalani (owner's representative)
Architect:
Robert A. M. Stern Architects—Graham S. Wyatt, project architect; Preston Gumberich, William Nolan, Jeff Schofield, Pat Tine, assistants; Robert Ermerins, landscape
Associate architect:
Henk van der Meent
Lighting design:
Cline, Bettridge, Bernstein Lighting Design
General contractor:
L. Gesman Construction



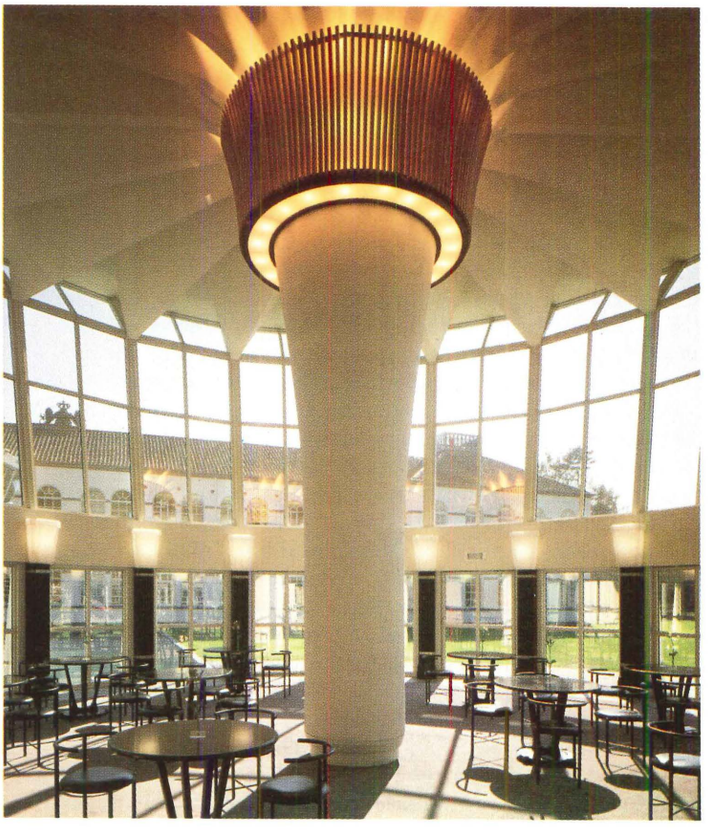












A vision realized

Behind the completion of the Graduate Theological Union library, orphaned in early infancy by the death of architect Louis Kahn, lies a saga of the successor architects' tenacious pursuit of Kahn's vision through passing time and changing times.

The profession and public feel the death of a great architect most keenly in the realization of future forfeiture of great buildings. For a client, the loss is more immediate. Among those bereaved by the sudden death of Louis I. Kahn, the Graduate Theological Union, which had approved his schematic design for its library only weeks before, suffered a double blow: a halt to a project of unusual significance to the institution, and an end to an architect/client relationship of unusual sympathy and promise.

A consortium affiliated with the University of California, GTU administers graduate programs for nine seminaries clustered on the fringe of the Berkeley campus. As GTU's first (and only) building of its own, the proposed library bore, in addition to its primary task of pooling the member schools' collections, symbolic import as a center for the consortium's loosely aggregated "campus" and the seat of its collective knowledge.

Not surprisingly, GTU's search for an architect was thorough. Guided by Richard C. Peters as professional adviser, its selection committee interviewed 18 well-known architects, of whom Kahn alone, the story goes, made no presentation. Instead, he talked of books and theology—reiterating, one feels sure, his dictum that a library "bring books to the light"—and the marriage was made.

When Kahn died before its consummation, GTU again turned to Peters, a former student and unabashed admirer whose firm Kahn had hoped to retain as local representative for the project. Peters in turn called on Joseph Esherick, another long-time Kahn acquaintance, and the two, with their offices, associated to see the library to completion. Because the scheme in hand was clearly tentative—little more than a sketch rendering (opposite) and sketchy plans (page 116)—the pair first combed the sparse documentation for clues to how Kahn might have developed his proposal, then continued the quest through the Office of David Wisdom, Kahn's professional heir. Wisdom could shed little light on a project Kahn had pursued independently, but reminded the new team that Kahn himself would not have let first thoughts force a final solution: "Do whatever you think you ought to do."

Reassured but nonetheless committed to a serious effort to divine—and, insofar as possible, carry through—Kahn's intent, Peters and Esherick made a pilgrimage to his major works. At the famed library at Exeter Academy, they were rewarded with epiphany. There, Esherick says, "We could see beyond patterns on paper to the whole" of the concept for GTU. The Kahnian vision thus resonates in their interpretation of those patterns, overriding change and compromise forced both by problems intrinsic to the project and by tribulations peculiar to its setting.

In the original scheme, the library was depicted as an orange-tree-bedizened ziggurat opening on a parklike plaza that affirmed the building's role as actual and symbolic center for the associated schools. Rising three stories above an underground garage, the stepped terraces embraced an interior eloquent of Kahn's near-mystical affinity for natural light: study areas at perimeter windows, a two-story atrium bathed in light from an oculus, and triangular shafts channeling daylight to a lower stack floor set partially below grade. At the inner corners of a four-square "street" grid, square columns, oversized to double as mechanical housings, framed a freestanding elevator/fire stair and an open half-circle stair climbing from ground floor to oculus.

Taken to design development, the preliminary scheme understandably fell short of fully resolving elaborated program requirements and such technical issues as seismic stability and energy conservation. The design was adapted accordingly, but nonetheless retained, and refined, the underlying concept: the damaging changes were those demanded in order to wrest necessary permits from the city of Berkeley. In an effort to block the project, local opponents rallied to the putative causes of preservation (a "historic" brown-shingle carriage house stood on the site) and priorities (activist seminarians opposed spending for any purpose save educational programs). As a result, the project was subjected to review—and revision—for a year and a half before gaining approval on appeal to the city council.

The building did not survive the ordeal unscathed. The first element to go was the garage: it would attract traffic, neighbors said. Then the plaza was eliminated: it would have required closing a section of the road through the site, reducing the same neighbors' parking space. The most serious impact of the prolonged review, however, was a virtual standstill in fundraising while the library's fate remained in question. Two years later, when full funding had still not materialized, GTU faced a choice between further delay and radical surgery on both the design and an already-expanded program. It chose neither, electing instead to accommodate its shrunken purse by building in two phases.

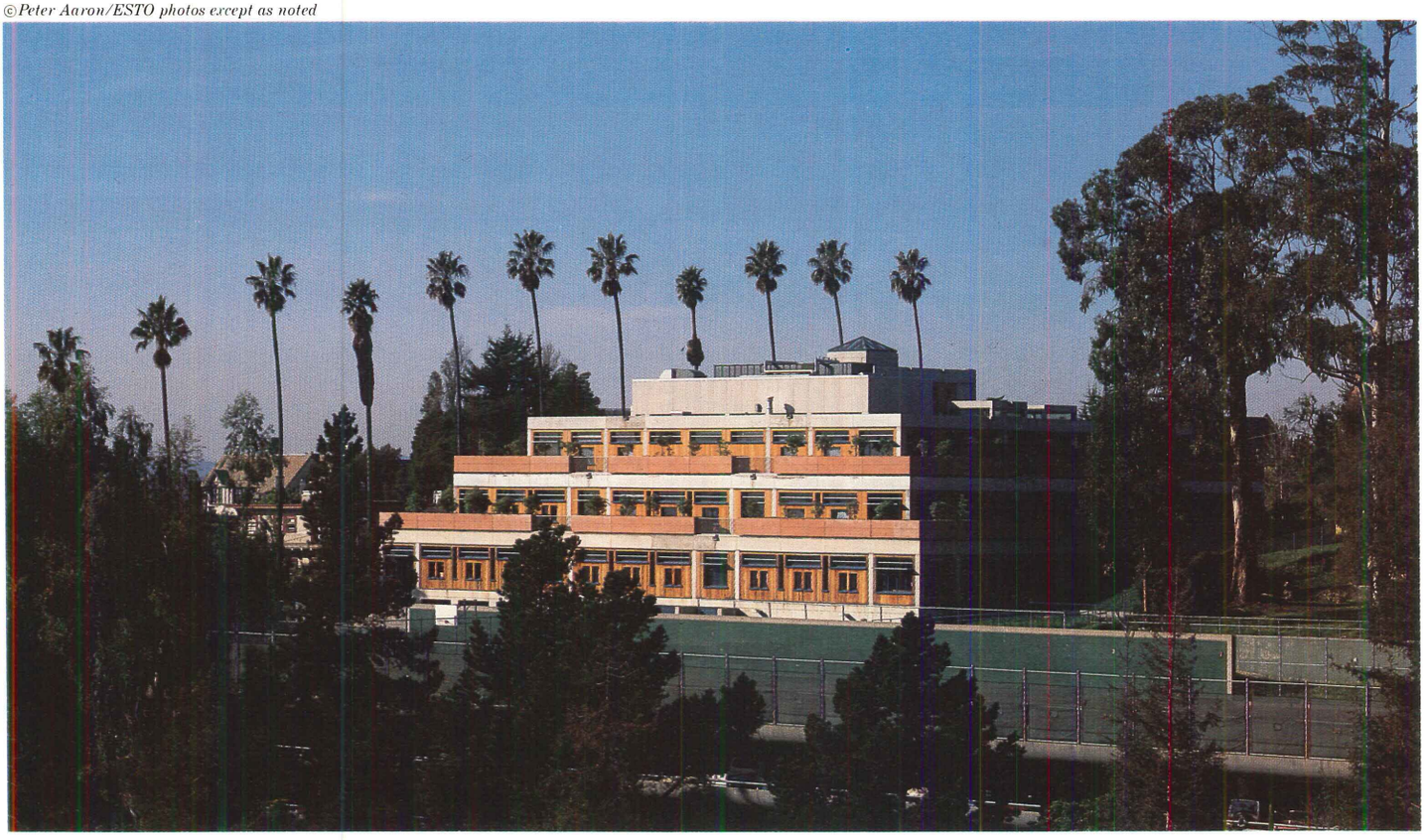
The first phase, completed in 1981, included only the basement and lower level, modified to provide minimal space for GTU's administration, originally assigned the top floor, and as much stack area as could be shoehorned in. The library functioned in this truncated facility until 1984, when monies for its completion at last became available, and GTU paused to re-examine the overall building design before proceeding with the second phase.

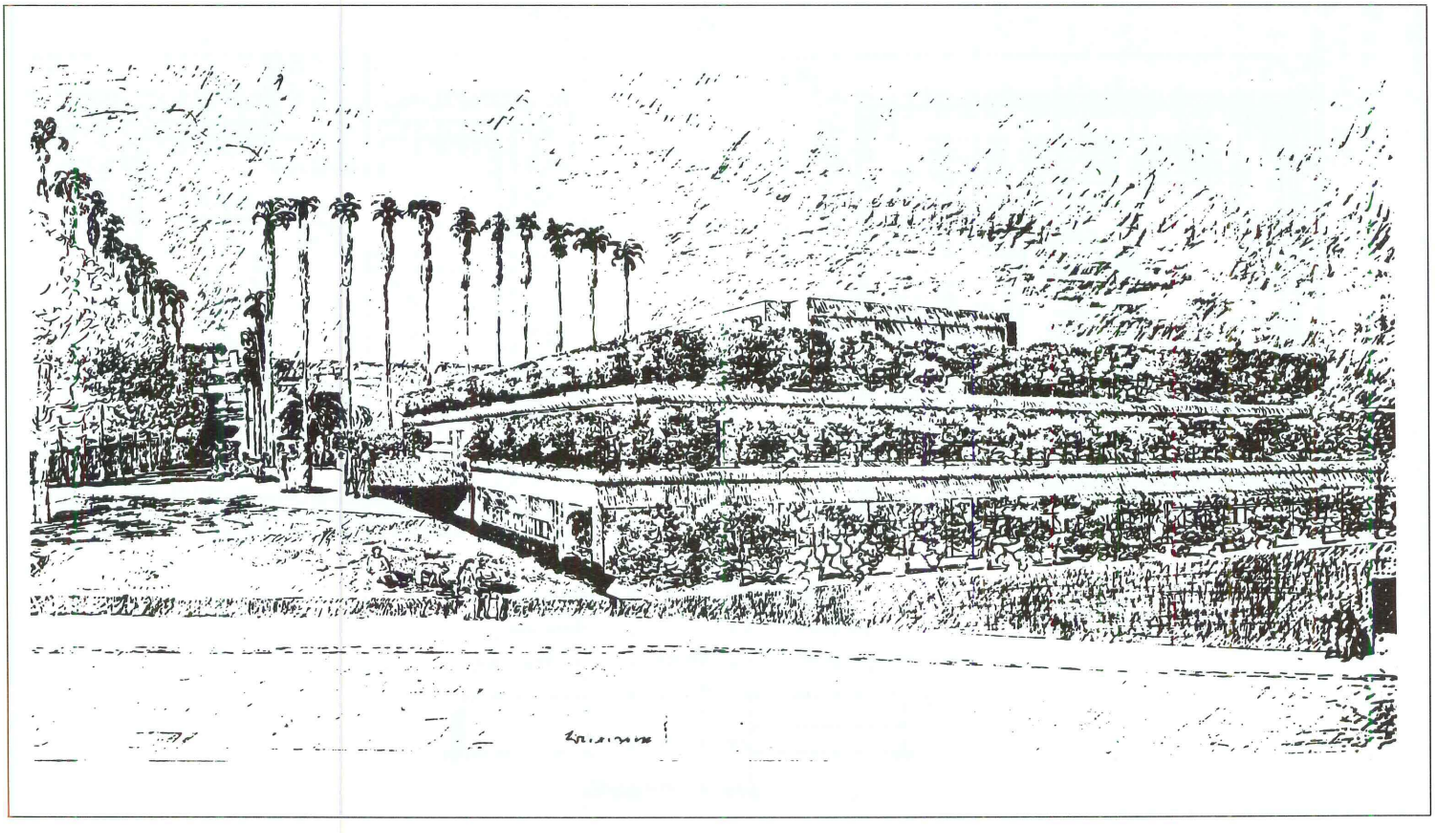
The final reworking of the scheme yielded mixed results, largely because the library's continuing thirst for growing room, intensified by its delayed completion, had to be appeased with bits of square-footage from areas first conceived as light and open. Swollen administrative offices, for example, further bloated by the last-hour add-on of a large meeting room, overflow the third floor's one-time terraces, while the clerestories they demand clutter a roof profile originally dominated by the oculus. Similarly, the main floor's powerful opposition of stair and elevator core, balanced by massive light shafts and sturdy square columns, was lost to practical and technical considerations (the light shafts "wasted space"; the open stair was barred by code), exacerbated by relentless spatial demands. At the same time, the redesign not only recaptures the atrium's elegant symmetry, but brilliantly reverses the erosion of the main-floor area around it by extending its reach through the building's full height via a central well that opens the lower reading room to the flow of light from the oculus overhead. In addition, the circulation grid pierces the dense stacks around the library's working floors, visually joining the light-suffused atrium with the windows that illuminate carrels and studies lining the outer wall.

In the end, the library bears Louis Kahn's unmistakable signature not only in its basic form but in the materials and details his successors adapted from earlier projects. We cannot know what the building might have become had it remained in Kahn's hands throughout its gestation. But we can know that the inheriting designers faithfully executed his mandate to "bring the book to the light." More, they achieved the private goal they professed on accepting the commission: to complete the library not "in the style of Louis Kahn," but with "the love, spirit, and dedication" he brought to his work. *Margaret Gaskie*

Flora Lamson Hewlett Library
Graduate Theological Union
Berkeley, California
Esherick, Homsey, Dodge & Davis, and Peters, Clayberg & Caulfield, Architects Associated for GTU Library
Schematic Design: Louis I. Kahn

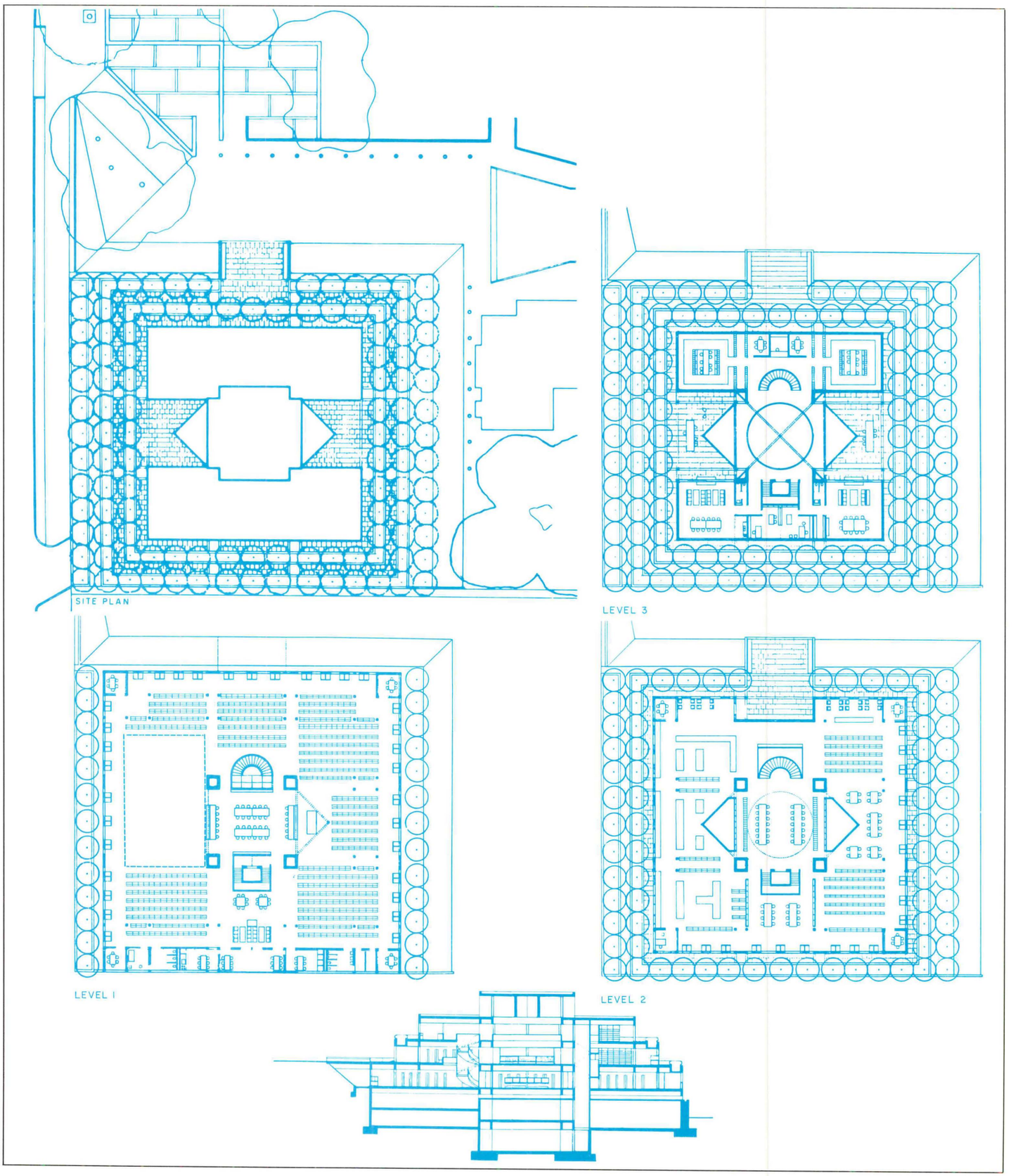
©*Peter Aaron/ESTO photos except as noted*





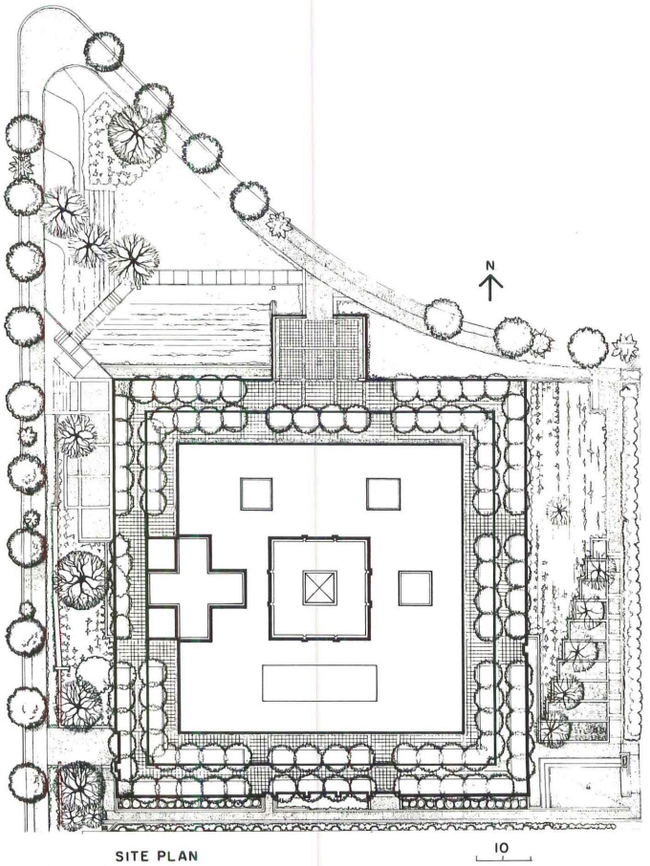
Kahn's proposal: 1974

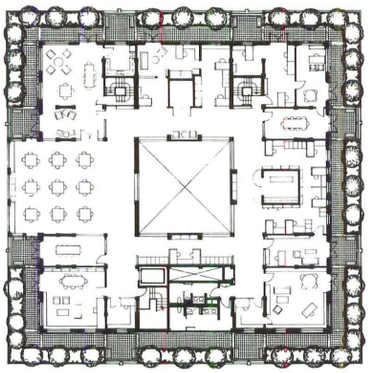
Kahn's proposal for the GTU library (reproduced below from the original blueprints) hints at a forceful interior geometry softened by glowing evanescent light. Under a program far less demanding than the then-fixed building ultimately had to accommodate, the plan for the main floor, introduced by the spacious plaza, clearly envisions a celebratory great hall. Defined by strong pure forms—a tall oblong enclosing the elevator and fire stairs, triangular shafts channeling light to stacks below, the clean curve of an open stair—the space is crowned by an oculus that rises above a penthouse terrace flanked by administrative wings. Within the strict structural grid that also directs circulation, stacks and study areas receive perimeter light filtered through orange trees lining the terraces.

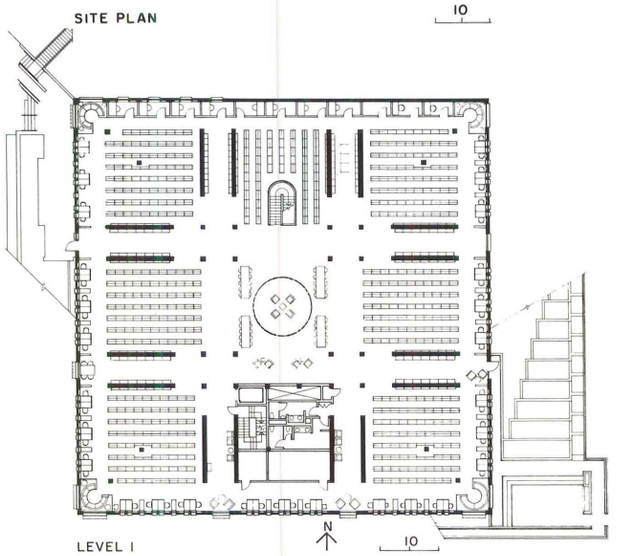


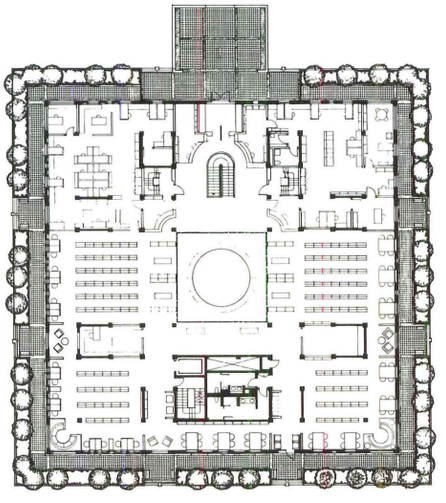
The library as built: 1987

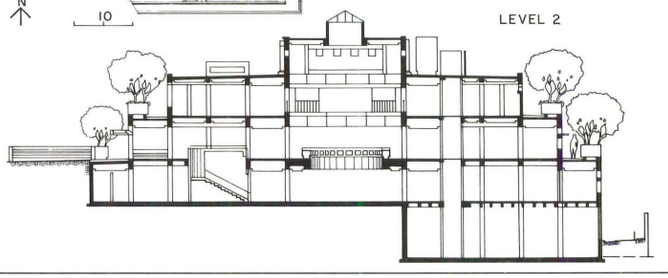
Between development of the initial Kahn scheme and completion of the library 13 years later, key elements of the vital central atrium, as well as the generously open disposition of stacks and study areas (both rendered vulnerable to programmatic second thoughts by the long hiatus) were nibbled away by accruing demands for stack room. The client-dictated crowding out of the "space-wasting" light shafts, for example, is perhaps even more regrettable than the community-dictated deletion of the plaza. Even so, the atrium's intended grandeur is largely captured by offsetting its cramped surround with a vertical expansion that carries the well lit by the oculus through to the building's ground floor, rather than confining it to the main entry level as originally planned.





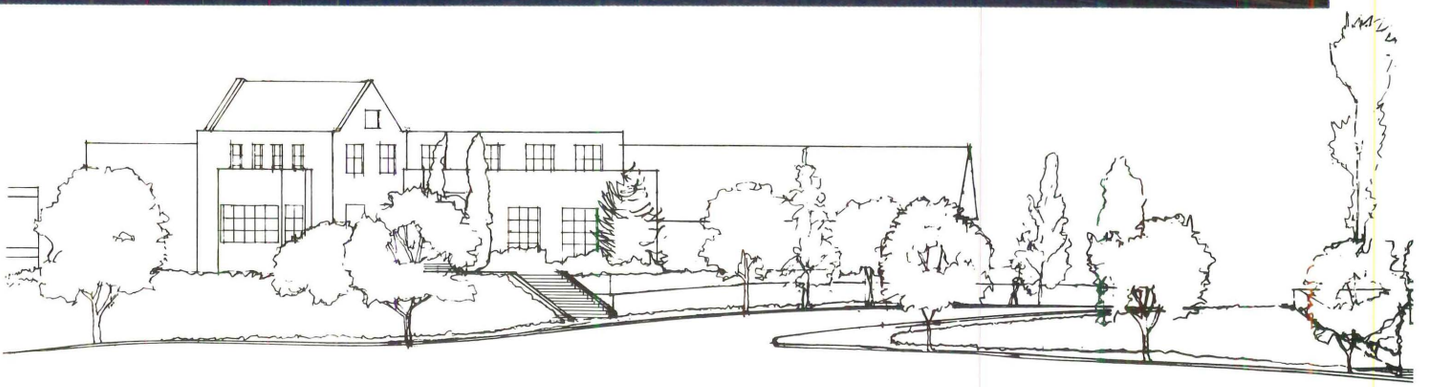




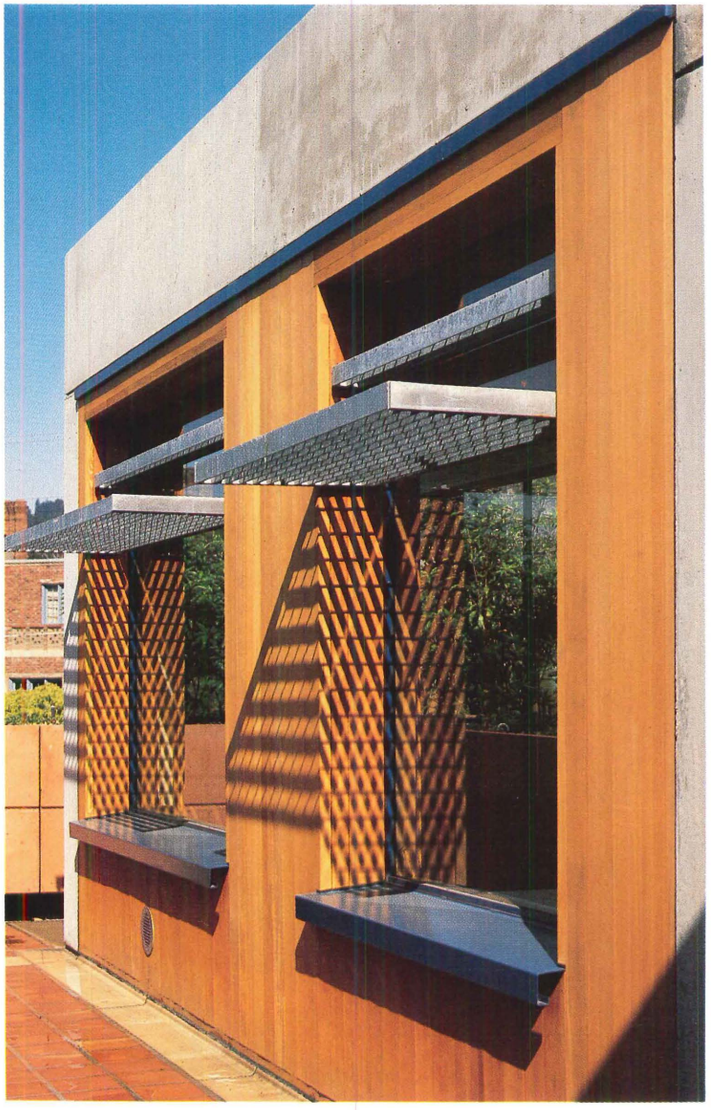


Thomas J. Caulfield, of Peters Clayberg & Caulfield, who was partner-in-charge and architect for the library from approval to dedication, notes ruefully that the huge planters for the orange trees could not be fabricated in terra cotta as Kahn envisioned, but had to be formed of terra-cotta-colored concrete. (The orange trees, too, were replaced by mock oranges better suited to the North Berkeley climate.) His regret speaks volumes of the pains taken to preserve the building's Kahnian essence in detail as well as concept. Set a story and a half below grade to reduce its bulk, and terraced upward to the oculus and pyramidal skylight, the building merges gracefully with its hilltop site and small-scale, but dense, semiresidential surround (photo and drawing below). The fit is aided by the architects' decision to forego Kahn's early notion of stainless-steel cladding, à la Yale's Mellon Center, and to refer instead to such earlier Kahn buildings as the Salk Institute, infilling the poured-in-place concrete frame with panels of warm, vertical-grain fir. The brilliant blue

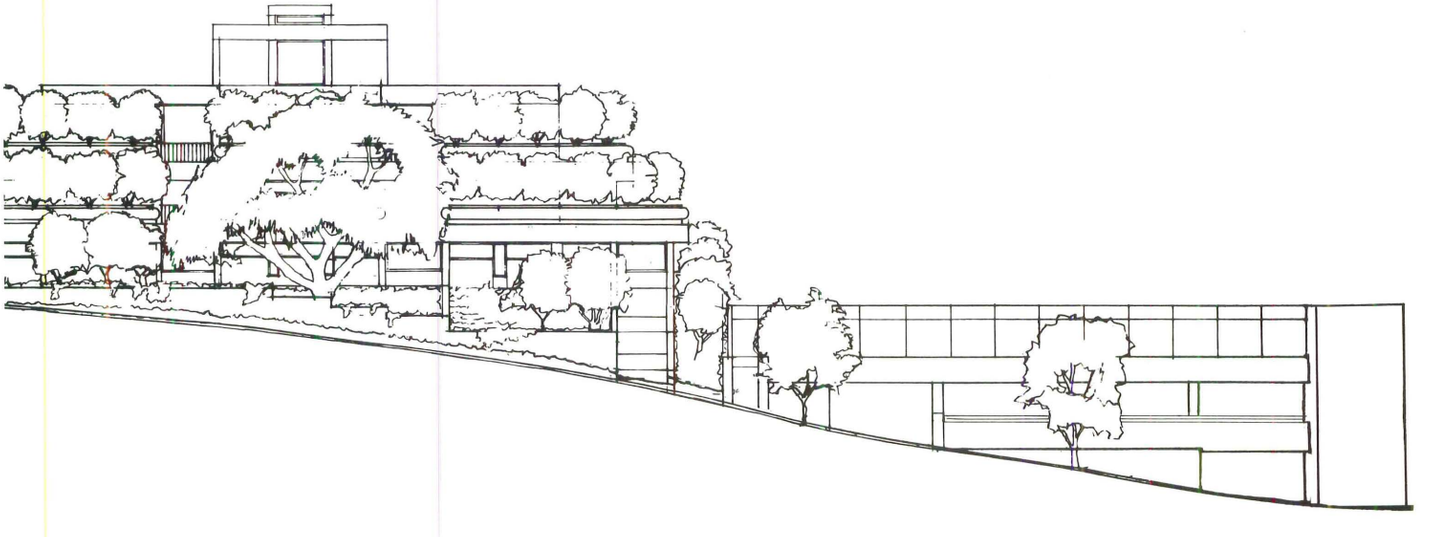




sheet-metal trim, however, is a modest version of the Mellon Center's similar detailing. Though veiled by the trees that will eventually dominate the building, windows (appropriately sized and placed to light varied activities within) are deep-set, and overhung on the south and west by galvanized metal sunshades (below left). In a rare departure from the exterior Kahn sketched, the serried trees lining the inviting terraces were broken at intersections with the interior "street" grid to provide outdoor niches and open vantages to the stunning views from the library's hilltop. A more controversial break is the intrusion of a clerestoried top-floor meeting room (below right), which interrupts the building profile, but also announces the location of the main entry court below.

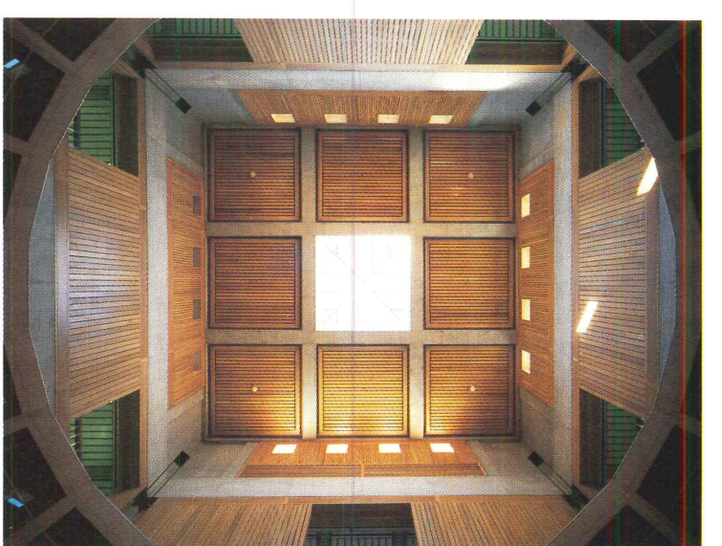






The reading area on the lower-level stack floor (below) is not always as tidy as shown: like moths to flame, students often tug tables toward the opening that introduces light from the oculus skylight far above (bottom). At the upper floors, the atrium is a grand near-cube (opposite), flooded with light from both skylight and clerestory windows, which is returned by glowing white-oak walls and ceiling. Circled by display cases, the central well augments a broad white wall that encourages student-organized art exhibits (this month, Christo). The top-level administrative areas include the obtruding meeting room (bottom opposite)—for which the best argument may be the excitement lent the space by the open structure of its clerestory. The atrium is also the focus of the nine-bay structural grid marked out by "streets" through which travel both people and mechanical/electrical systems concealed in suspended aluminum ceilings.





Jane Lidz

Flora Lamson Hewlett Library
Graduate Theological Union
Berkeley, California

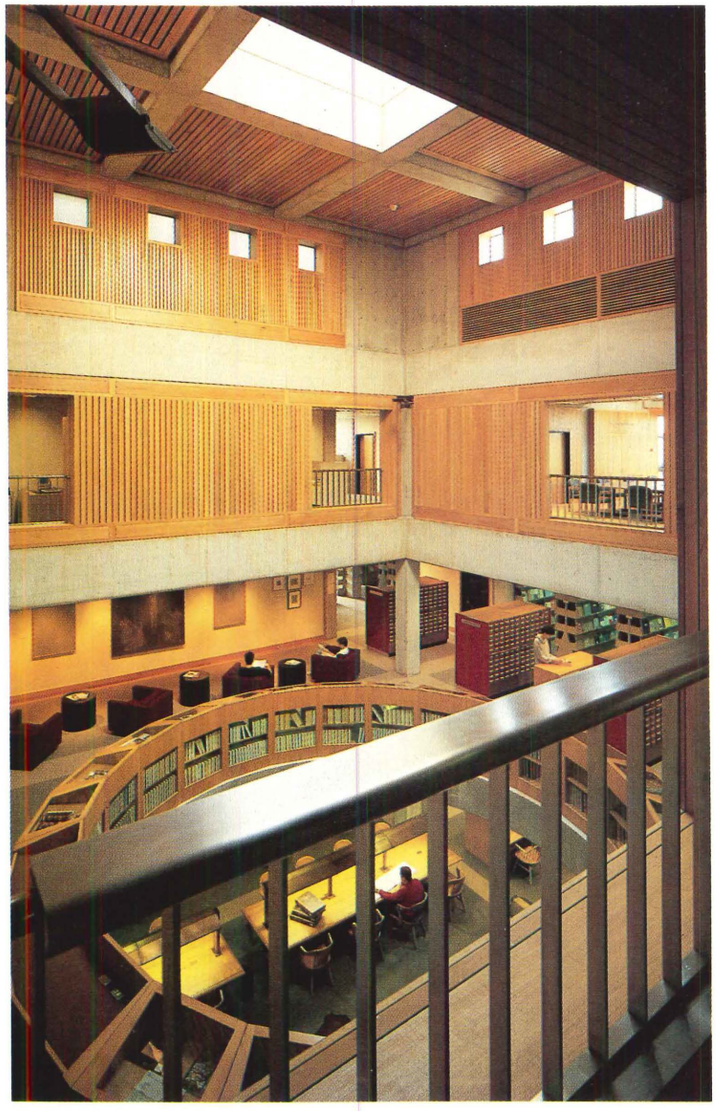
Architect:
Esherick, Homsey, Dodge & Davis, and Peters, Clayberg & Caulfield, Architects Associated for the Graduate Theological Union Library—Richard C. Peters, design partner; Thomas J. Caulfield, design partner; Arthur Heinrich, project manager; Joseph Esherick, Charles Davis, Peter Dodge, Barry Baker, Linda Rhodes, Leonard Salvato, William Simpson, Joram Altman, David Burness, John Haag, Gary Parsons, David Rulon, project team

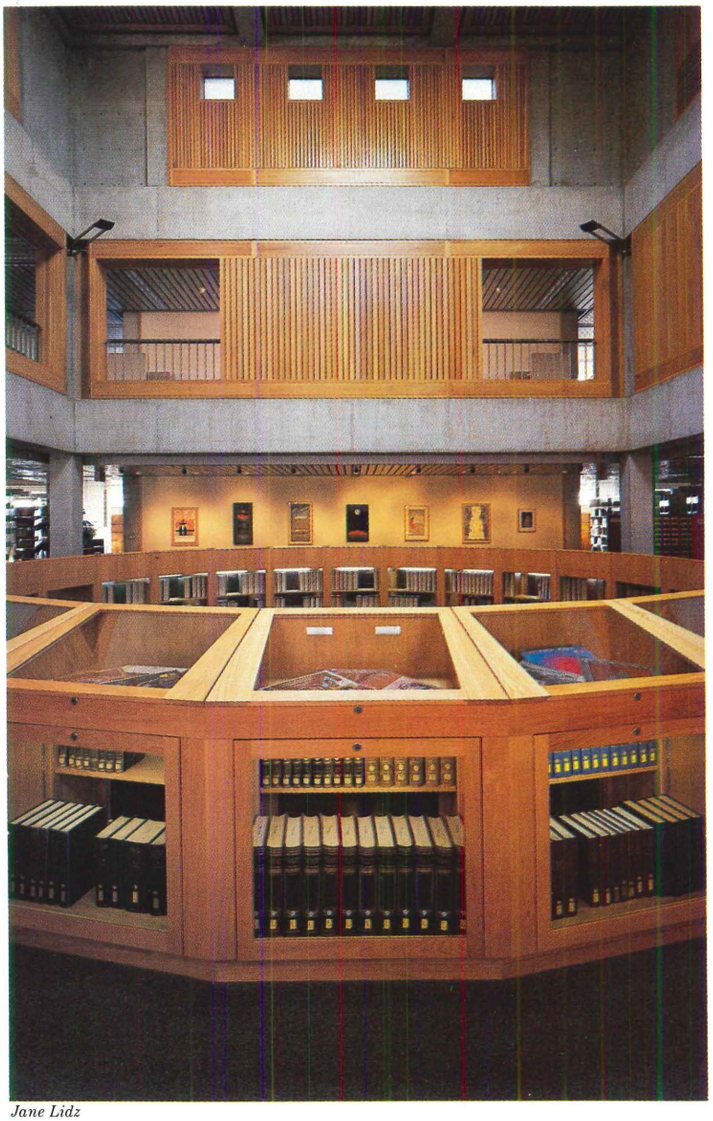
Landscape architect:
Richard Vignolo

Engineers:
Rutherford and Chekene (structural); Takahashi Associates (mechanical/electrical)

Consultants:
Charles Salter Associates (acoustics); Marie Fisher, Massi Moini (interiors)

General contractor:
Christensen & Foster

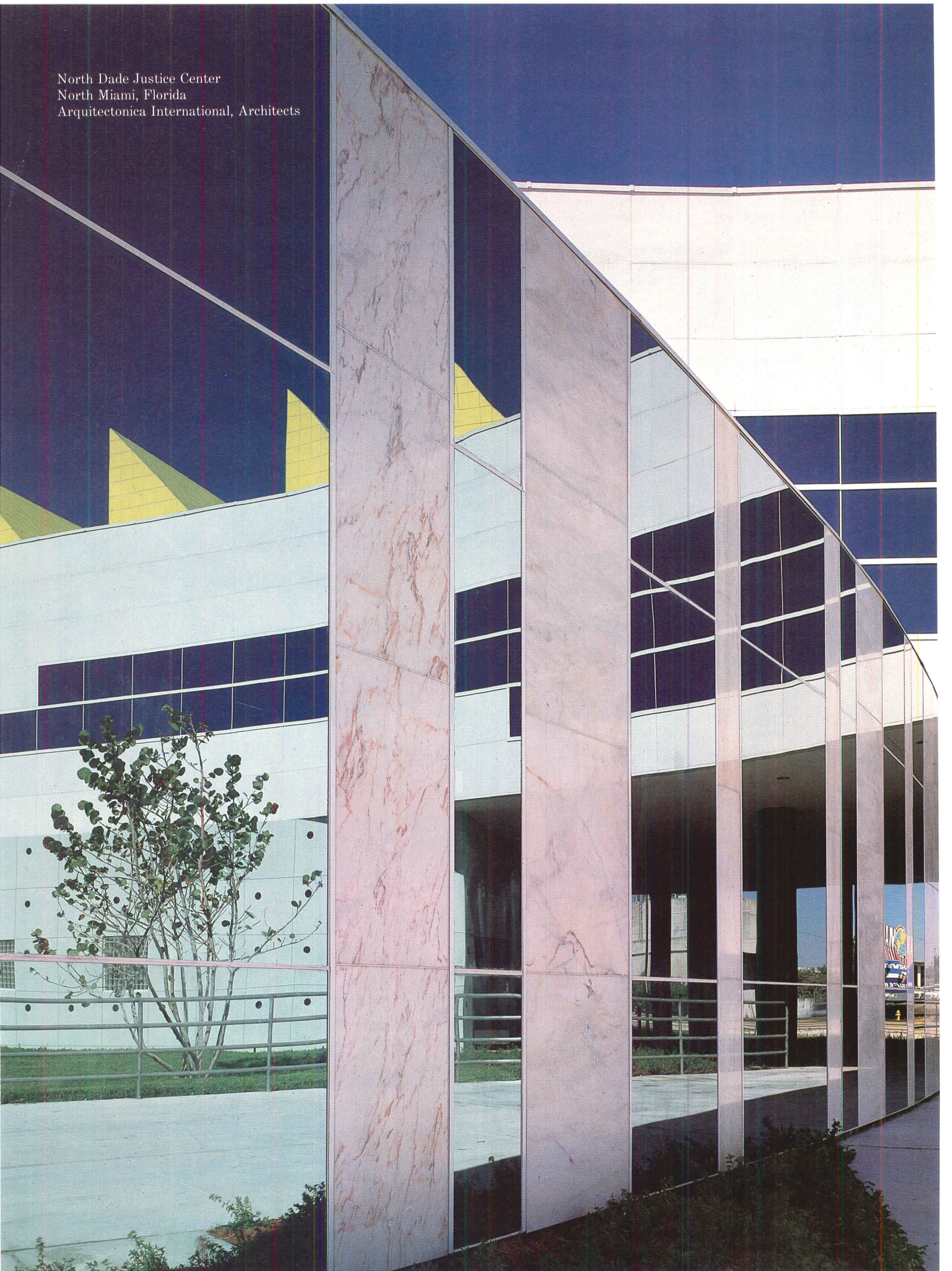




Jane Lidz



Jane Lidz



North Dade Justice Center
North Miami, Florida
Arquitectonica International, Architects

Miami virtue

By incorporating its suave brand of regional Modernism into a satellite justice center serving northern Dade County, Florida, Arquitectonica has redefined American courthouse architecture.

No building type in this country is more hallowed than the county courthouse. The very words evoke images of symmetry and repose, of richly ornamented revival-style buildings set alongside spacious public piazzas. But if architects of the past sought to ennoble American participatory democracy by enshrining the scales of justice in stately classical temples and imposing rotundas, most courthouses erected since World War II seem to reflect little more than local government's struggle to cope with the civil and criminal caseload of an increasingly litigious society. In far too many instances, courthouses have become ill-maintained places of dread—shoddy ad-hoc environments where citizens are greeted by dropped ceilings, plywood partitions, and makeshift graphics, and where even a normally joyous act like obtaining a marriage license can quickly sour in the face of endless queues and bureaucratic indifference.

Three years ago, when Florida's 11th Judicial Circuit proposed erecting a new satellite courthouse in northern Dade County as part of an ongoing plan to decentralize greater Miami's overburdened criminal-justice system, an architect-selection panel comprising district judges, the county clerk, and members of the General Services Administration decided it was time for a change. By choosing Arquitectonica to design the $5.65-million facility, the committee was willing to take a chance on a firm which, though single-handedly responsible for putting Miami back on the architectural map, had never before designed a public building. "We were selected," said Arquitectonica founding principal Bernardo Fort-Brescia, "because following the rules clearly hasn't worked with recent courthouse design, and there was a willingness among the judges to explore new solutions for the building type." Judge Marshall Ader, a member of the selection panel, agreed: "I had seen numerous other courthouses around the country, and I felt that Arquitectonica could do a better job." Then, too, the promised participation as program consultant of Walter H. Sobel and Associates, a Chicago firm best known for its functional courthouse designs, helped win over some of the more conservative G. S. A. bureaucrats.

If the exigencies of a 40,000-square-foot justice center did not exactly provide Arquitectonica with a functional carte blanche, the nondescript character of the 12-acre building site did give the firm something of an esthetic tabula rasa. Located at the edge of a mangrove preserve in North Miami, the site is part of a two-mile stretch of county-owned land along Biscayne Boulevard (U.S. 1) that remains, anomalously for overbuilt South Florida, a tattered semi-industrial backwater pockmarked by cheap motels, adult bookshops, and check-cashing emporia. High-density development of the area, essentially put on hold during the 1970s while the county debated the possibility of a world's fair on the parcel, has moved forward in recent years with the completion of a campus for Florida International University and with the county's plans to build a regional government center around a manmade pond at the edge of the mangroves. As the first phase of that plan, the justice center was, according to Fort-Brescia, "no place for a background building. We wanted the courthouse to be an expressive object in space [that] would make a strong statement about the government's intentions for the area."

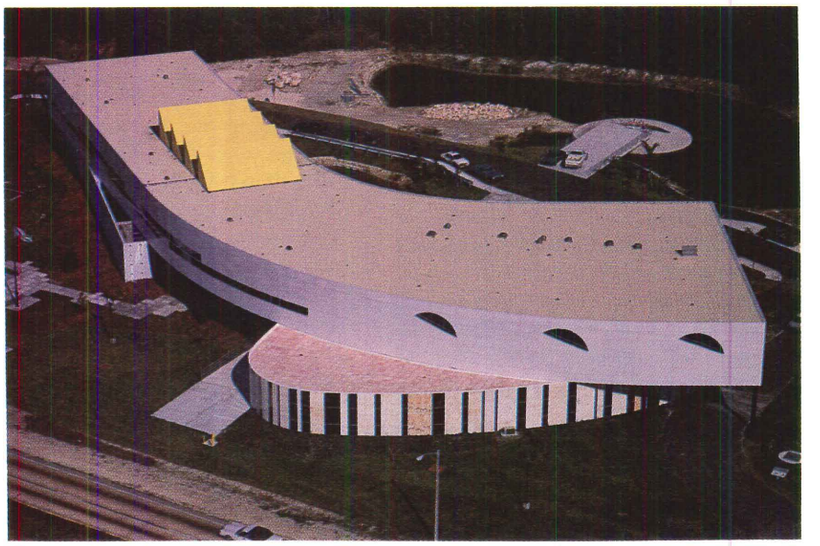
Toward that end, Arquitectonica configured the facility as three discrete volumes, each differentiated by its own function, shape, and material and color palette. A freeform pavilion housing the main entrance lobby and clerical pool is clad in random-width vertical strips of pink polished marble and green reflective glass; a one-story rectangle enclosing the judges' private parking lot is divided into pale-green stucco squares, each adorned with a single black ceramic-tile disk; and a gently sweeping court building containing five courtrooms, two civil-hearing rooms, and the judges' chambers is sheathed in white porcelain-on-steel panels articulated by bands of blue reflective glass. In contrast to Arquitectonica's celebrated early condominium towers in downtown Miami, which continue to startle motorists driving along Brickell Avenue with their bold geometry and strident colors, the North Dade Justice Center represents the creative power of a firm confidently approaching middle age. Color, though still an integral part of the Arquitectonica "look," is a bit muted here, and the architects have deftly tempered their usual visual fireworks with an inner logic that seems fittingly respectful (given the building type) without being somber.

Above all else, perhaps, every element of the justice center's design resonates with Arquitectonica's unwavering belief in the validity of Modernism—from the effortless way the court building appears to float above the landscape on thin columns and the decidedly nonmonumental placement of the main entrance in an inconspicuous breezeway, to the seemingly arbitrary manner in which each building is abruptly terminated. Chief among the project's many virtues is a delightful series of light-filled spaces that are a far cry from the dark interiors of so many American courthouses, new or old. Again, every detail reinforces the notion of Modern abstract expressionism. Four skylights illuminating the ground-floor lobby, for instance, are arrayed randomly, like confetti, while a gray-and-white checkerboard terrazzo floor is skewed wildly out of its orthogonal brass frame. In the clerk area, 12 payment windows are separated by panels tinted the quintessential '50s colors of turquoise and purple. Upstairs, in a long public lobby overlooking the mangrove preserve, oak docket brackets emerge from each courtroom wall like little kidney-shaped swimming pools, while a pair of freeform windows allows the jury-assembly room to borrow a bit of light from the public corridor. Where one expects conventional rectangles for restroom push plates and small courtroom-door windows, trapezoids unexpectedly appear.

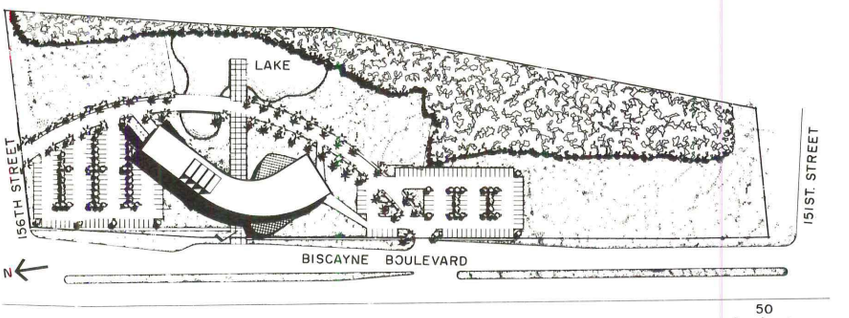
But, if visions of Mies, Le Corbusier, and Morris Lapidus were clearly dancing in the architects' heads, the North Dade complex also exhibits some gratifying references to its prosaic surroundings. Driving along Biscayne, for example, one can hardly fail to notice the deliberate juxtaposition of four bright-yellow roof monitors with the shed-roofed projections of adjacent county-owned fire and police headquarters to the north, and with garish billboards strung out along the highway in both directions. A trio of crescent-shaped windows set into the roadside elevation, moreover, is an unmistakable tongue-in-cheek reference to the logo of the Miami Moon Motel, a humble early 20th-century motor court located just a mile south. And while the patterned grid of the center's parking enclosure may seem distinctly modern-age, the motif is rendered in stucco and tile, two of South Florida's most venerable building materials. When confronted with the question of Arquitectonica's work and its context, Fort-Brescia smiles. "We do want to create buildings that belong to Miami," he insists, "but we don't need to imitate past architecture to be contextual. Our buildings try to capture a more intangible spirit of the place. That's what makes them timeless." *Paul M. Sachner*

©Paul Warchol photos

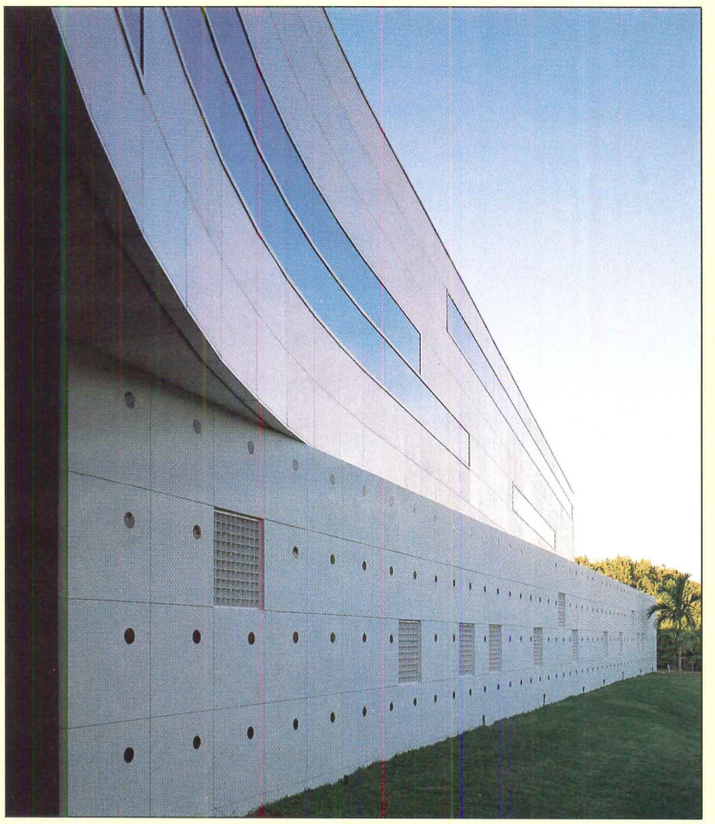
By bending the 375-foot-long court building into a shape vaguely resembling the blade end of a hockey stick, Arquitectonica gave the North Dade Justice Center two principal facades serving two distinct functions. The convex side of the arc (top) faces heavily trafficked Biscayne Boulevard and is meant to have an especially strong presence for motorists passing by at the posted 40-mile-per-hour speed limit. (Despite its name, Biscayne is more a highway than a boulevard, and access to the justice center will be almost exclusively by private car. To accommodate motorists who wish to pay traffic fines and parking tickets without leaving the instrument of the crime, the center has Florida's first drive-up teller window.) The concave side of the building, by contrast, is geared more for pedestrians as it curves welcomingly around a manmade salt pond (bottom and opposite). A concrete walkway extending over the pond will terminate in a terraced environmental sculpture (under construction), designed by New York City artist Elyn Zimmerman and fabricated of native Florida keystone.

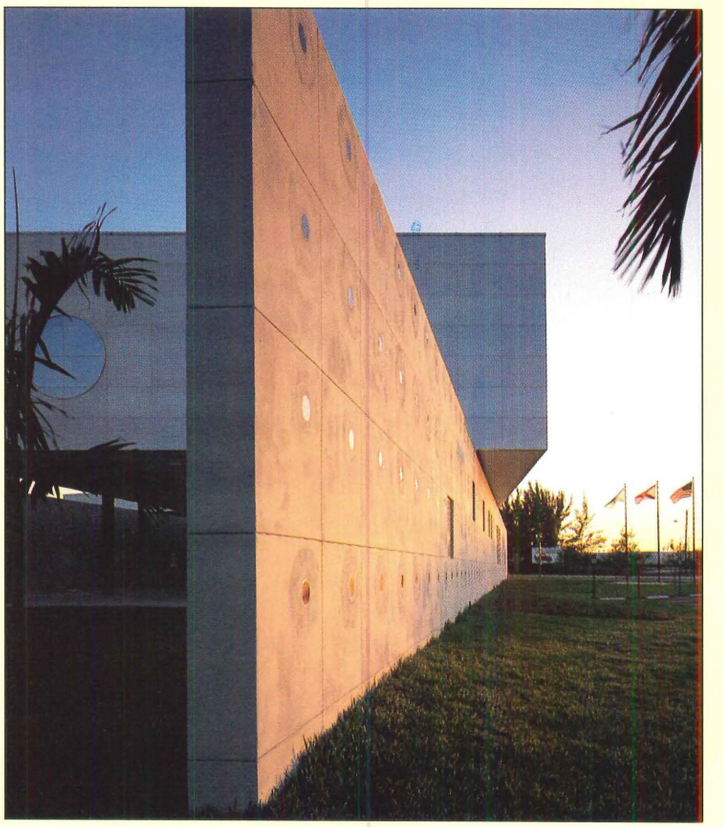




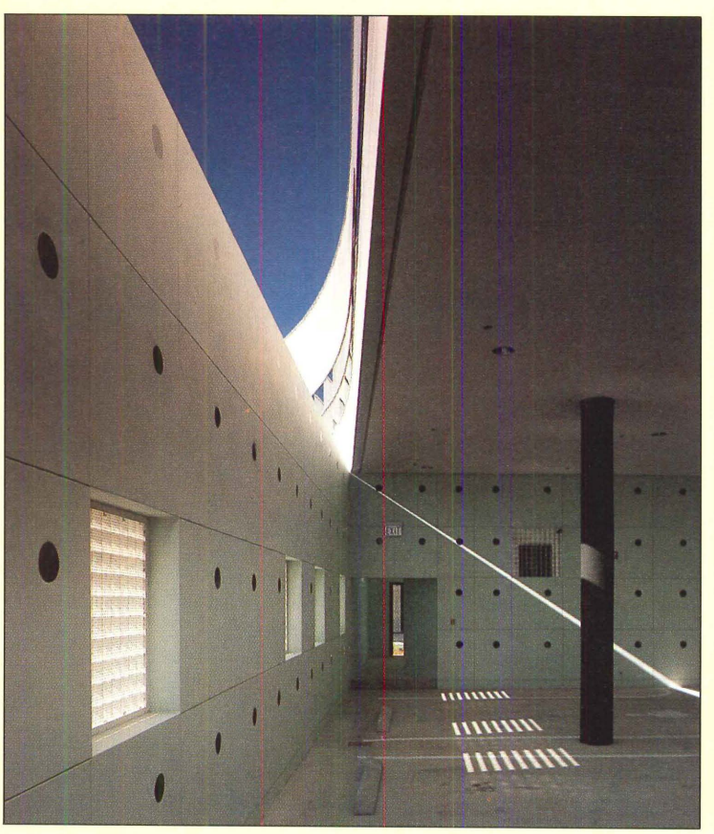


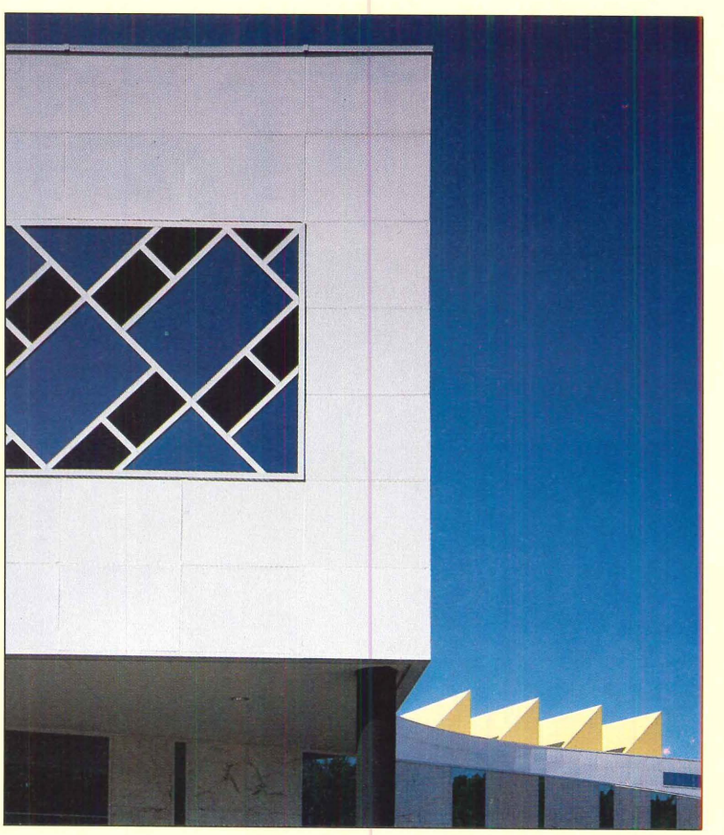


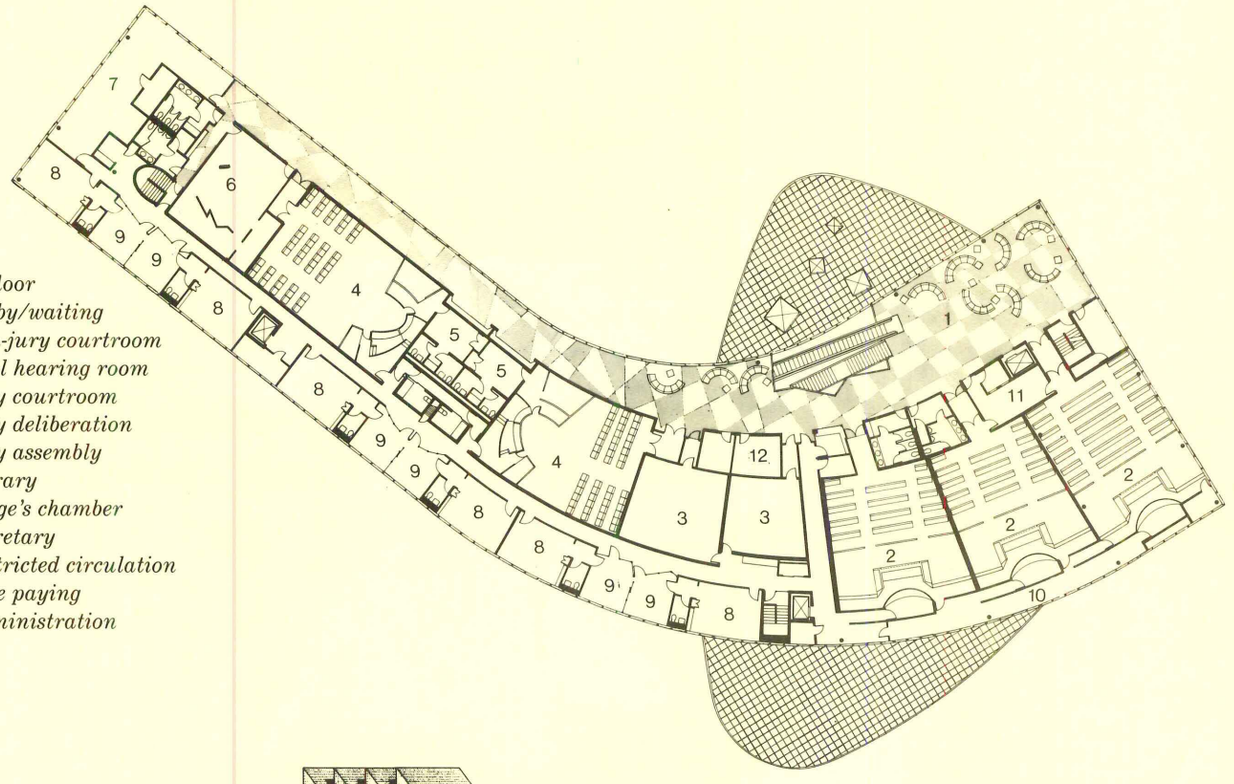




One of the functional requirements at North Dade was a secured area for judges' parking and prisoner unloading. Arquitectonica turned necessity into invention by twisting a 10-space concrete-block auto enclosure slightly off-axis with the court building and sheathing the box in a green stucco grid embellished by black ceramic disks and random egg-crate ventilator panels (top and bottom left). From the parking area judges ascend to their chambers—and prisoners to holding areas—via a private elevator and stair. A restricted corridor serving the judges' chambers is separated from the public area by three non-jury courtrooms, two civil-hearing rooms, two juried courtrooms, and a jury-assembly room (plans opposite). An oculus in the northern end wall of the court building (top right) illuminates the center's law library; for the southern end of the building, Arquitectonica principal Laurinda Spear has created a stained-glass panel (bottom right and page 128), whose abstract pattern is based on a Seminole Indian design.

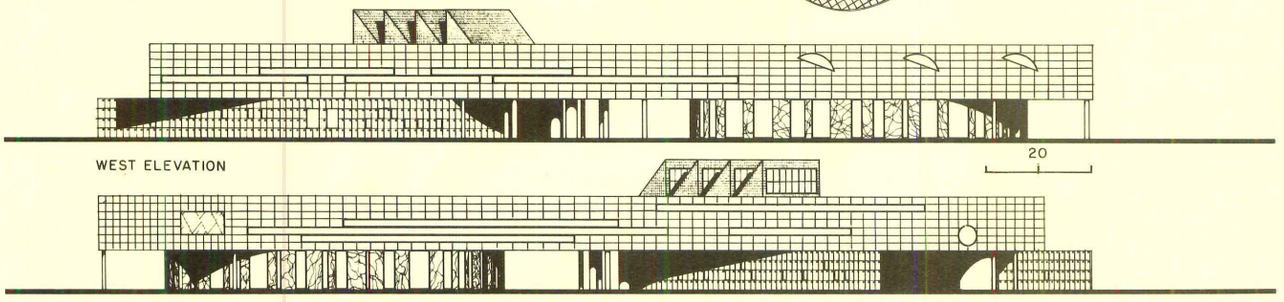


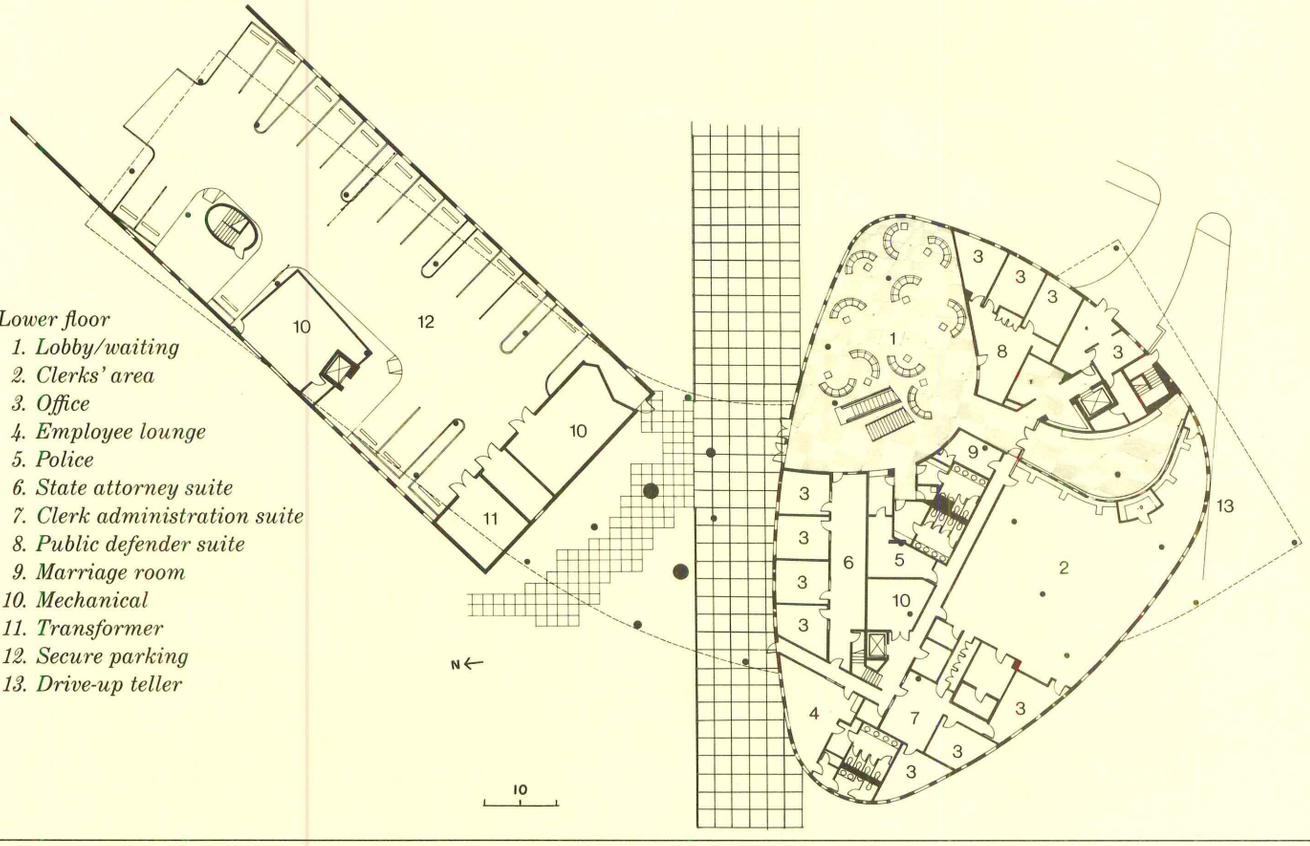




Upper floor

1. *Lobby/waiting*
2. *Non-jury courtroom*
3. *Civil hearing room*
4. *Jury courtroom*
5. *Jury deliberation*
6. *Jury assembly*
7. *Library*
8. *Judge's chamber*
9. *Secretary*
10. *Restricted circulation*
11. *Fine paying*
12. *Administration*

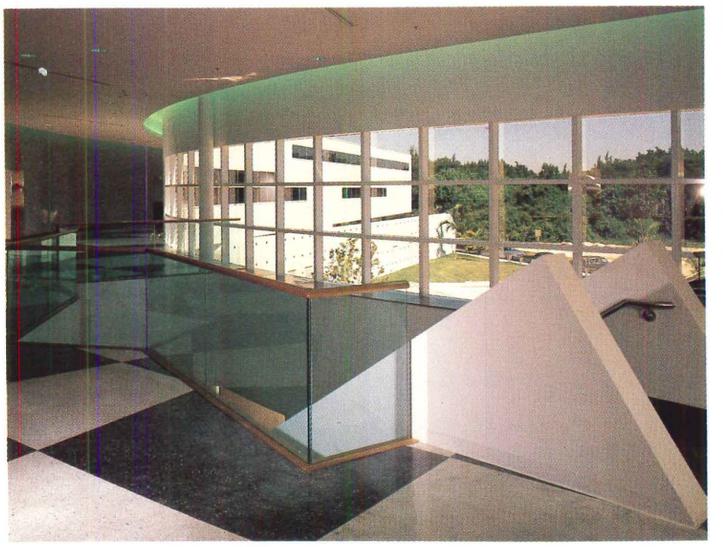




Lower floor

1. *Lobby/waiting*
2. *Clerks' area*
3. *Office*
4. *Employee lounge*
5. *Police*
6. *State attorney suite*
7. *Clerk administration suite*
8. *Public defender suite*
9. *Marriage room*
10. *Mechanical*
11. *Transformer*
12. *Secure parking*
13. *Drive-up teller*

The public's access to North Dade's upper-level courtrooms and civil-hearing rooms is through a commodious lobby that commands views of the salt pond and mangrove preserve through bands of horizontal strip windows (top) and through the red, silver, and clear panes of a stained-glass panel (bottom). Each of three non-jury courtrooms (opposite) is partially illuminated by a crescent window that casts an ethereal glow over the judge's bench. With their sedate oak furnishings and gray-tweed carpeting and seat upholstery, the courtrooms are the most conservative public spaces in the justice center. Each is acoustically isolated by noise-tight astragals and sound-absorbent wallcovering.



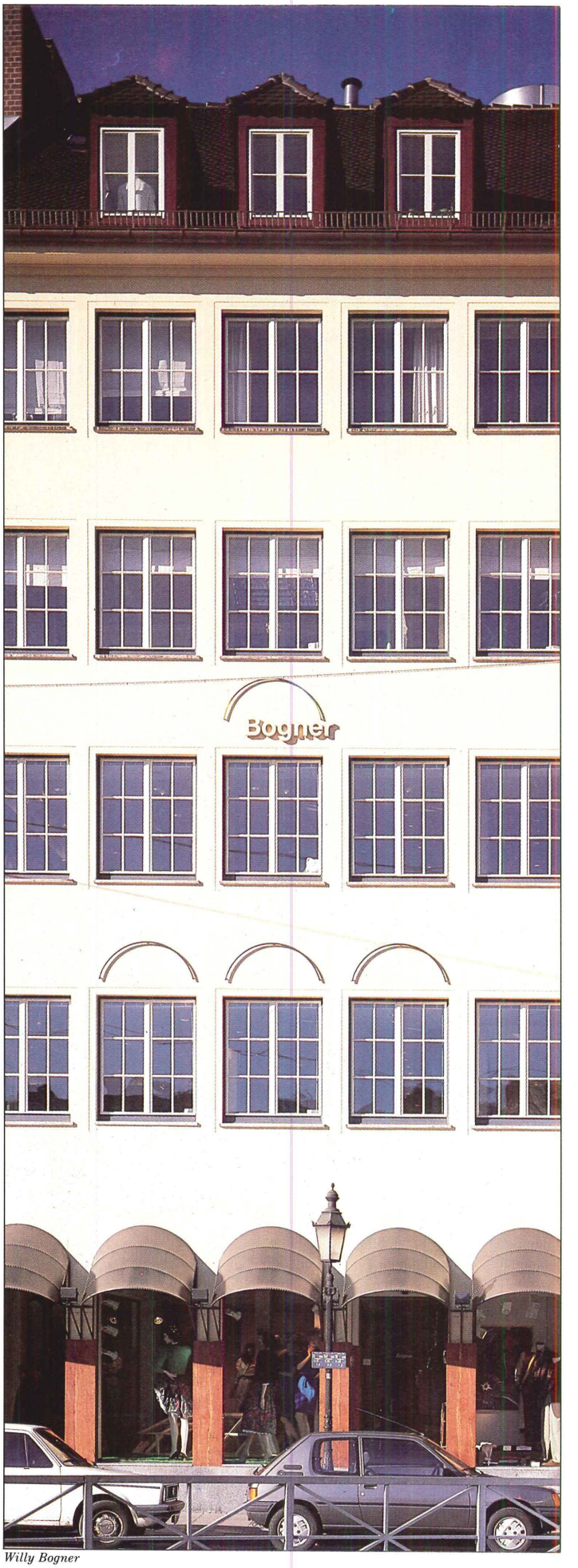


North Dade Justice Center
North Miami, Florida
Owner:
Metropolitan Dade County General Services Administration
Architect:
Arquitectonica International—Bernardo Fort-Brescia, Laurinda Spear, principals-in-charge of design; Martin J. Wander, project architect; Sergio Bakas, production architect; Olga Espinosa, Sandra Fandre, Richard Perlmutter, Janice Rauzin, Neal Schofel, project staff
Engineers:
Cagley, Riva & Braaksma (structural); Lagomasino & Vital Associates (mechanical, electrical, civil)
Landscape architect:
Ted Baker Group
Consultants:
Walter H. Sobel and Associates (judiciary architecture and program consultant)—Walter H. Sobel, Edward L. Deam, Donald Mahan, project team; Robert H. Tanner (acoustics); Post, Buckley, Schuh & Jernigan (environmental permitting consultants); Elyn Zimmerman (public art)
General contractor:
Shafer & Miller, Inc.

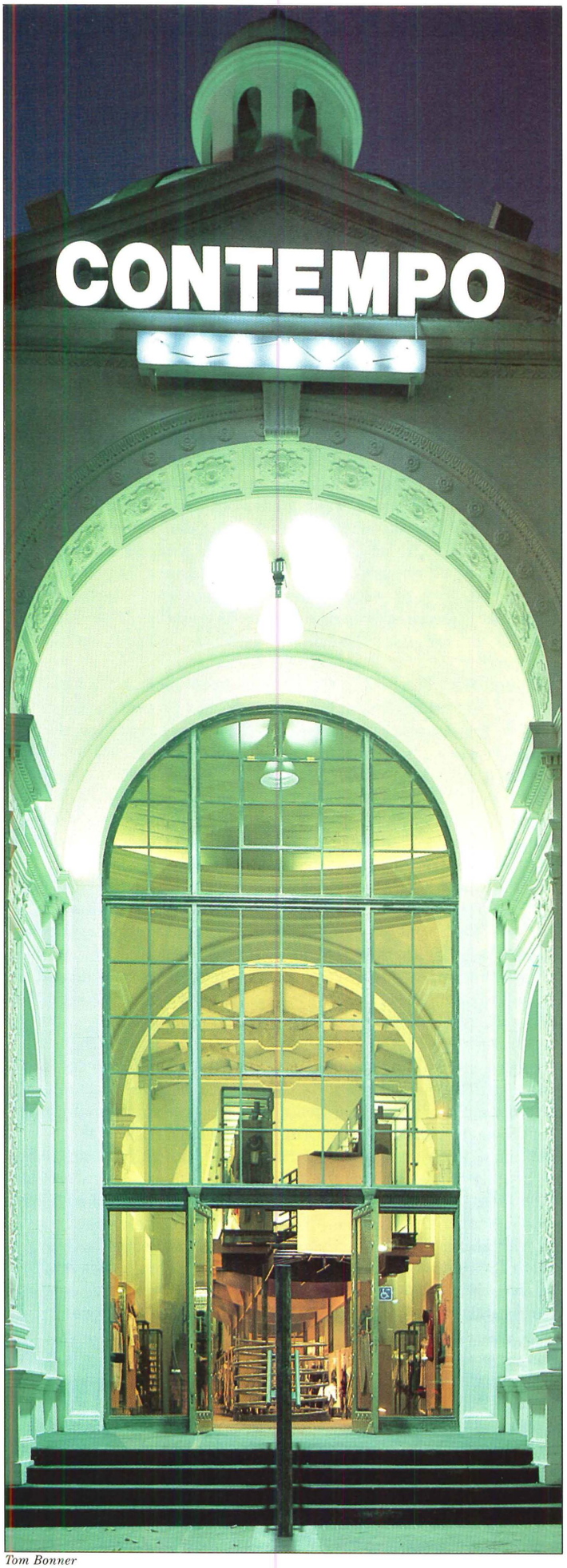


Designer labels

Most architects get nervous, and not unreasonably so, when their work is compared to fashion. Admittedly, it is unnerving to be likened to the skirt-length controversy—minis "in" one year and "out" the next. Nonetheless, architecture and clothing design do share some general attributes, most notably the ability to capture and project a particular esthetic attitude. In recent years, clothing manufacturers have become increasingly geared toward promoting a "lifestyle" that catches the attention of potential customers, and have turned to high-profile architects to create its three-dimensional expression. As revealed in the following portfolio, the intentions behind such commissions can be as varied as the results. Contempo tapped Morphosis for a one-off showcase of the company's wares in Los Angeles (pages 132-135), Mexx International asked Robert A. M. Stern to set the company mood in its Amsterdam flagship store (pages 138-141), and Bogner enlisted Mark Mack not only to renovate its original Munich shop, but also to develop a display program for its retail and wholesale outposts worldwide (pages 136-137). The correlation between architecture and fashion is most apparent in the Mexx boutique, where the architect's own "style" was deemed the appropriate expression of the company's self-image, and least obvious—and, perhaps, most problematic—at Contempo, where a local firm was asked to add "regional" flair to a neighborhood outlet. Whether fashioning a fitting embodiment or a contrasting backdrop, the architect's main charge is to enhance the merchandise. Although the different goals of retailers and architects do not always guarantee a perfect match of object and setting, they are sure to produce intriguing ensembles.
Karen D. Stein



Willy Bogner



Tom Bonner

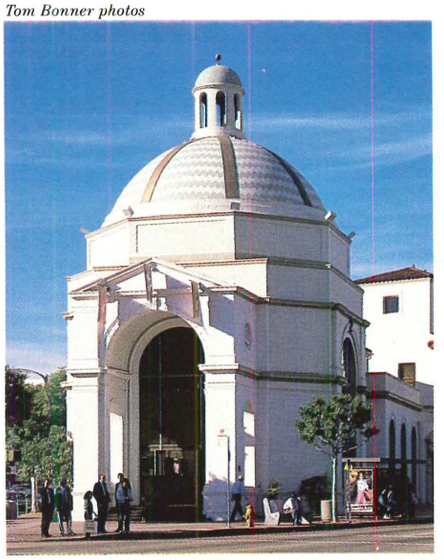


©Peter Aaron/ESTO

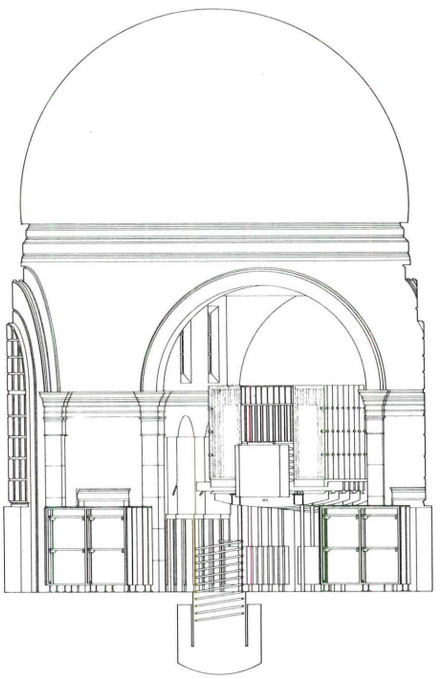
Contempo Casuals
Los Angeles
Morphosis, Architect

Scene stealer

Tom Bonner photos







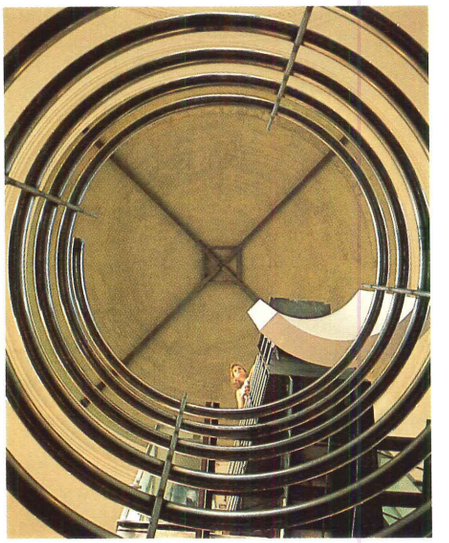
Architect Thom Mayne, of Morphosis, tells how he and his partner, Michael Rotondi, "edited and spliced a series of outtakes" from previous projects to compose the Contempo clothing store they inserted into a former bank in the Westwood section of Los Angeles (top left). The film-making terminology cannot simply be attributed to the proximity of Hollywood to the architects' office in Santa Monica; Mayne clearly voices aspirations for his own creative medium when he speaks admiringly of movie directors who have made, in his words, "offbeat, artistic" films that became unexpected box-office hits. For Mayne, being an architect means creating drama, and he views commercial commissions as opportunities to display publicly a highly personal vision. Taking cues not only from the motion-picture industry, but also from such diverse disciplines as mathematics, astrology, and sociology, the work of Morphosis is no cut-and-paste of historical references. Instead, Mayne and Rotondi attempt to stage experiential discoveries, whose success should be gauged in response not to the traditional "what do you think?" but to the quintessentially L. A. "how does it make you *feel*?"

Southern California-based Contempo's decision to tap local architectural stars for some image-making of its own seems only logical, though on closer inspection the distinct priorities of company and designers were, in fact, difficult to reconcile. Founded in 1964, the chain operates 206 retail outposts located primarily in the western U. S., though it now has plans for expansion eastward. In the Los Angeles area, members of the company's target audience—18- to 30-year-old women—are likely to dine in any of several overbooked Morphosis-designed restaurants; when shopping, however, they're apt to be less willing to wait before sampling the fare. With that in mind, perhaps, the architects interrupted the Classical axial layout of Contempo's landmark surround with a 56-foot-long steel and wood bridge that appears to have catapulted into the central domed rotunda from a semicircular apse at the rear (page 105, opposite, and plan, page 134). Fronted with an auto-paint-coated breastplate, the clothing-laden bridge virtually pushes the company's wares toward incoming customers. Flanking the two-story structure are three rows of display racks constructed from plywood boards and perforated metal sheets—intentionally rough backdrops to refined fabrics. The three subdivisions of the Contempo line—sportswear, dresses, and accessories—are shown separately in the front of the store and on top of and underneath the bridge, with smaller items contained in vitrines tucked behind existing concrete piers (page 134, bottom left); throughout the interior abstract metal mannequins display suggested outfits (page 134, bottom right). Despite the theatrical emphasis it receives from a spectacular spiral railing, a crater in the center of the rotunda floor serves no perceptible functional purpose (opposite, and pages 134-135). Comprehension of the climactic role this set-piece plays in Mayne and Rotondi's cryptic story line probably demands more than the attention span of Contempo's average shopper allows. Architecturally minded spectators, though, may find that Contempo's unconventional interior vies with the merchandise, in one of the constant battles for top billing that such projects often incite. At Contempo, one has only to stand in the foyer and gaze past racks of hangers toward the amazing bridge to realize who, or what, won *this* fight for center stage. *K. D. S.*



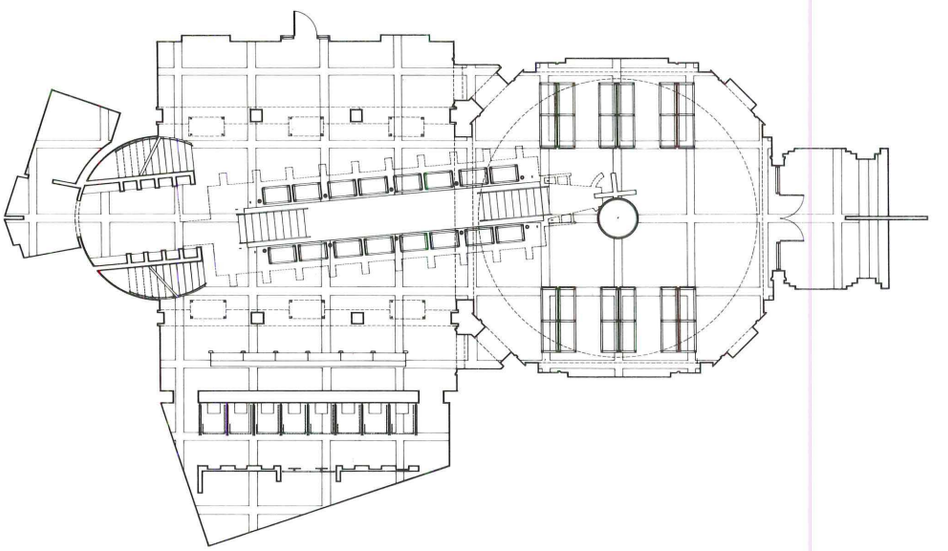
Contempo Casuals
Los Angeles, California
Owner:
Contempo Casuals
Architect:
Morphosis—Thom Mayne and Michael Rotondi, partners-in-charge; Tom Lasley, project architect; Ann Zellinger, Michael Sant, Connie Wexler and Kanika R'Kul, assistants
Engineers:
Gordon Polon (structural); Saul Goldin (electrical); Mel Bilow + Associates (mechanical)
General contractor:
Hugh F. Peter & Associates













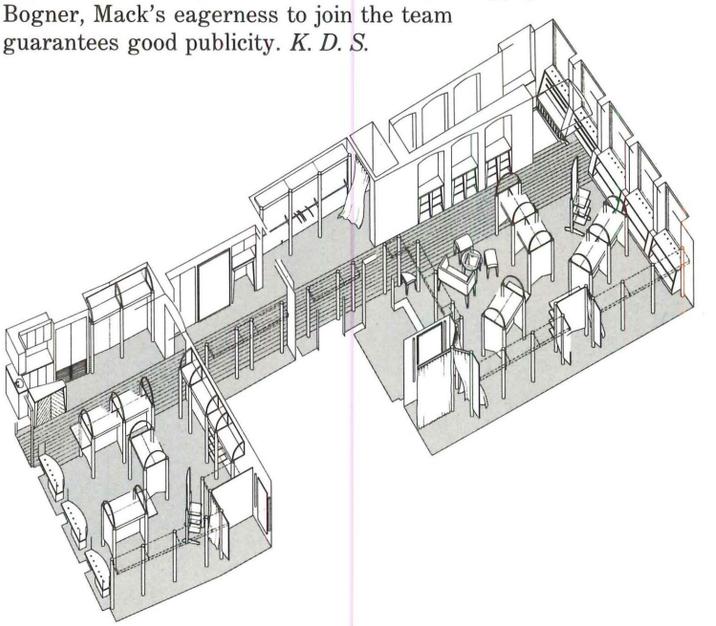
Bogner Fashion House
Munich, West Germany
Mark Mack, Architect

Team colors



After a trial run in the form of a 20-by-90-foot Bogner boutique on his home turf of San Francisco [RECORD, April 1986, pages 108-111], Mark Mack has become Willy Bogner's star architect. Even though the Munich-based manufacturer of upscale sportswear and ski apparel currently owns only a trio of shops in the United States, Mack's admission to the corporate lineup is no small matter. At last count the family-run parent company, Bogner International, comprised 131 outposts throughout Europe and Asia, and, if all proceeds according to plan, will soon preside over additional "centers of influence" by building more freestanding shops in key U. S. cities and opening a string of shops-*within*-shops across the country. The remodeling of the 6,000-square-foot flagship store in Bogner's Bavarian hometown marks the official inauguration of Mack's global esthetic program (left and opposite). Expanding on the display components he devised for the San Francisco project, the Austrian-born architect developed a system of demountable racks and shelves that can readily adapt to new clothing collections and the growing array of accessories; a lighting plan; and a color and material palette to guide all future Bogner forays into both the wholesale and retail markets. The general "recipe," as Mack calls it, can be modified as needed. For an installation within a chain store, for example, Mack can specify appropriate units from his inventory of standard elements, while still maintaining his worldwide signature style. Within Bogner's own emporiums, the architect is also able to create custom-crafted complements to his building-block basics. For the Munich store, Mack chose yellow from the company's rainbow logo as the dominant interior color, and treated his display units variously as sculpture (figure 3), partitions (6), and infill for niches (1,2,4,5). This agile arrangement of elements befits the sporty "lifestyle" that the purchase of Bogner attire seemingly carries with it. Although eager to promote its particular image, the company has shunned the costly advertising blitzes of similarly conceived ventures like Ralph Lauren or Esprit, preferring to invest entirely in *architectural* statements. As Bogner's U. S. National Sales Manager, Franz Muster, explains: "Our shops are our advertising." Happily for Bogner, Mack's eagerness to join the team guarantees good publicity. *K. D. S.*

Bogner Fashion House
Munich, West Germany
Owner:
Willy Bogner
Architect:
MACK—Mark Mack, principal-in-charge; Wooi-Cheng Choong, project architect; Eric Carlson, Leigh Sata, Christine May and Shaun Weston, project team
Associated architects:
Heino Stamm Planungsbüro; Bruckner & Partner
Engineers:
CWK and Büro Beier & Degen (structural); Büro Neumuller (plumbing, electrical, and mechanical)
Consultants:
Ansorg Lichttechnik (lighting); Arve Schreinerei und Raumgestaltung (interior/furniture); Neon Hadid (neon); Hugh McKay & Co. (carpet); Raab & Thiele (air conditioning); Cassani (exterior awning); Lindner Akustikbau (plaster); Maler Huber (paint)





1



2



3



4



5



6

© Willy Bogner photos

Mexx retail shop
Amsterdam, The Netherlands
Robert A. M. Stern Architects

The mirror of fashion

By Tracy Metz

©*Peter Aaron/ESTO photos*



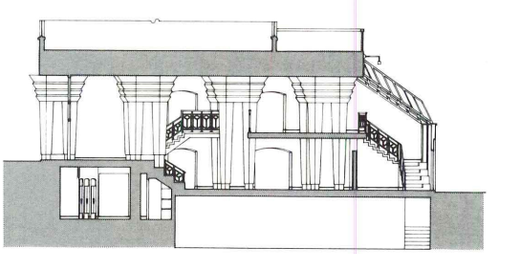
Two existing row houses in a predominantly 19th-century district of Amsterdam were demolished to make way for the Mexx shop. Robert A. M. Stern's decidedly modernistic facade stands out among its neighbors like a flapper among dowagers.

Amid the 19th-century surround of the Peter Cornelius Hoofstraat, Amsterdam's smartest shopping street, Robert A. M. Stern has set a Postmodern crystal. The New York architect's flagship store for Mexx International is a clear-cut multifaceted reference to early 20th-century sources: German Expressionism, Art Deco, and, perhaps most appropriately, the Amsterdam School. There might appear to be a contradiction between this retrospective spirit and a company that gears itself to "fashionable shoppers with a positive attitude . . . in other words, 'young fun'." But according to the retailer's Image Coordinator, Rob Weinberg: "Mexx reflects a certain lifestyle, and Postmodernism is the contemporary *architectural* style best suited to putting that message across."

On the exterior of the shop, Stern conveyed the chosen message through a free interpretation of Classical elements. A hand-brushed stainless-steel column topped with a ziggurat-shaped capital heralds the entrance (left and page 131). The motif is repeated inside, where matching columns bisect the length of the shop and similar pilasters line the walls (photo opposite, and plans page 139). The 10,000-square-foot interior comprises three levels—a lower-mezzanine women's department, an entry-level foyer, and an upper-mezzanine men's department. Throughout, sleek materials embellish the straightforward layout of display areas. Brushed-aluminum banisters with sandblasted-glass inserts (custom-extruded variations of the wooden ones Stern created earlier in his design for the Mexx headquarters; see pages 106-113) frame all staircases, and two-tone gray granite floors suggest intricate intarsia. Strips of low-level incandescent lighting recessed in the floor and within the column capitals radiate an aura of glamor. While Stern concentrated on setting the appropriate mood, David Davies Associates, of London, created a variety of display systems, adding cherrywood to the already rich assortment of materials applied to countertops, built-in niches, and dressing-room doors.

Stern's unabashedly exuberant architecture is, at the very least, suitable decor for Mexx's fast-paced output of 26 collections per year. At present the only clothing on display is the company's Dutch line, regrettably not nearly so chic as the shop itself. That, however, will change in the fall when Stern's store becomes the only location in all 14 countries within Mexx's orbit where the entire international collection will be available. "We will not only showcase our complete line in the Amsterdam shop," says Weinberg; "We also plan to launch our new products here and gauge public reaction. Both the clothing and architecture serve as the very best example of what we sell and how we sell it. We call this shop our fashion theater."

Tracy Metz, a free-lance writer living in Amsterdam, writes often about art and architecture.



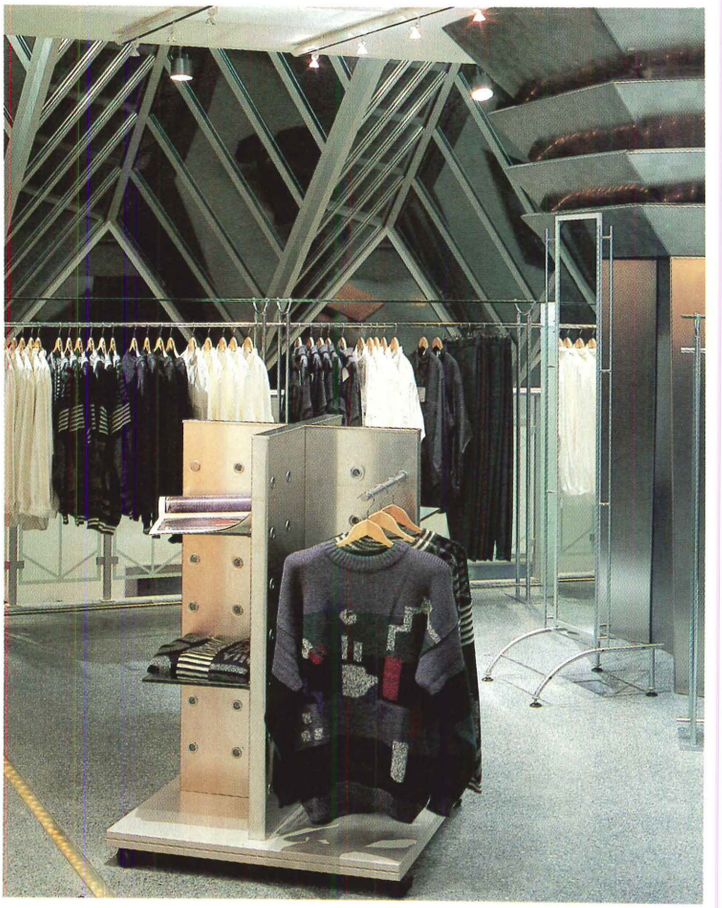
LONGITUDINAL SECTION

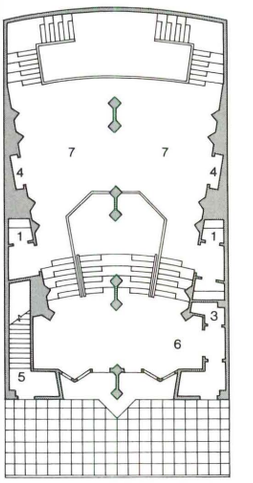


In collaboration with Stern's office, David Davies Associates, of London, devised two types of freestanding display systems: low, cross-shaped stainless-steel units, where clothing is grouped by color to emphasize mix-and-match possibilities (foreground, bottom), and delicate racks of shiny metal tubing topped by glass shelves (background, bottom). DDA inserted cherrywood panels in wall niches, which are pierced with regular rows of hollow metal circles resembling doughnuts, from which hooks and shelves can hang (opposite). In addition to natural light admitted into the back of the shop through the roof's crystalline structure, the interior is lit by MR16 lamps housed in iridescent glass cups mounted along ceiling tracks.

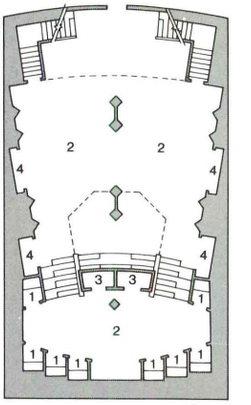
Mexx retail shop
Amsterdam, The Netherlands
Owner:
Mexx International
Architect:
Robert A. M. Stern Architects—Alex Lamis and Graham Wyatt, project architects; Jeff Schofield and Pat Tine, assistants
Associated architect:
Dik Smeding Architectburo
Engineers:
JH Duyts Adviesburo voor Bouwkonstruktics (structural); Smeva Koeling en Airconditioning (mechanical)
Consultants:
David Davies Associates (interiors); Cline, Bettridge, Bernstein Lighting Design (lighting)







ENTRY & UPPER MEZZANINE



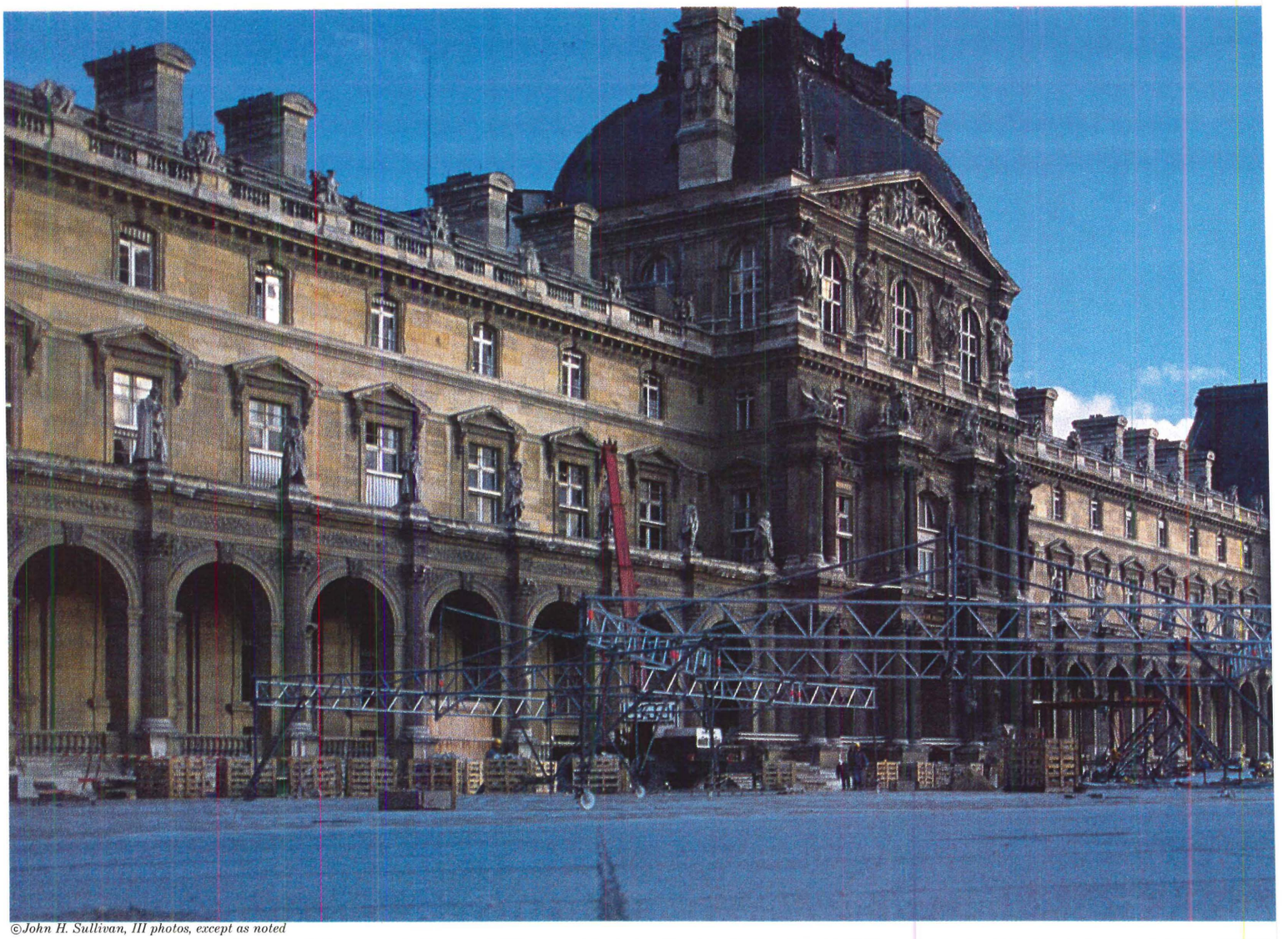
LOWER MEZZANINE

1. *Changing rooms*
2. *Women's department*
3. *Storage*
4. *Display*
5. *Stair to apartments*
6. *Cashier*
7. *Men's department*

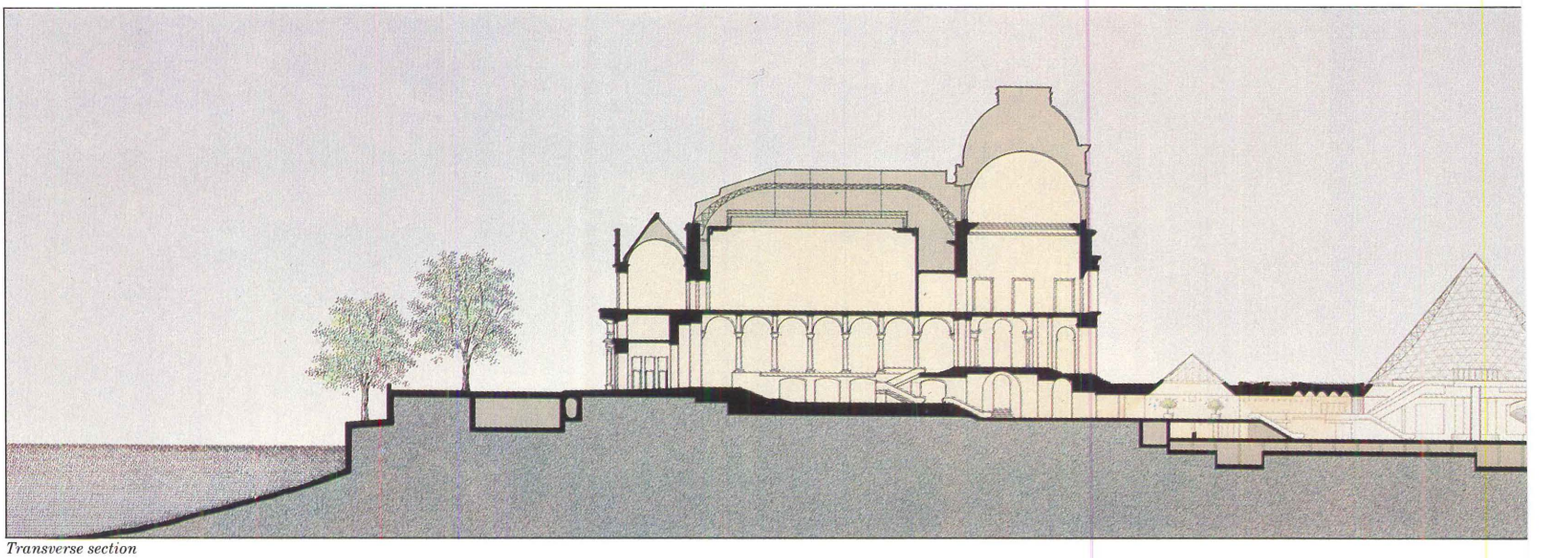


The Grand Louvre
Paris, France
I. M. Pei and Partners,
Architect

There and not there

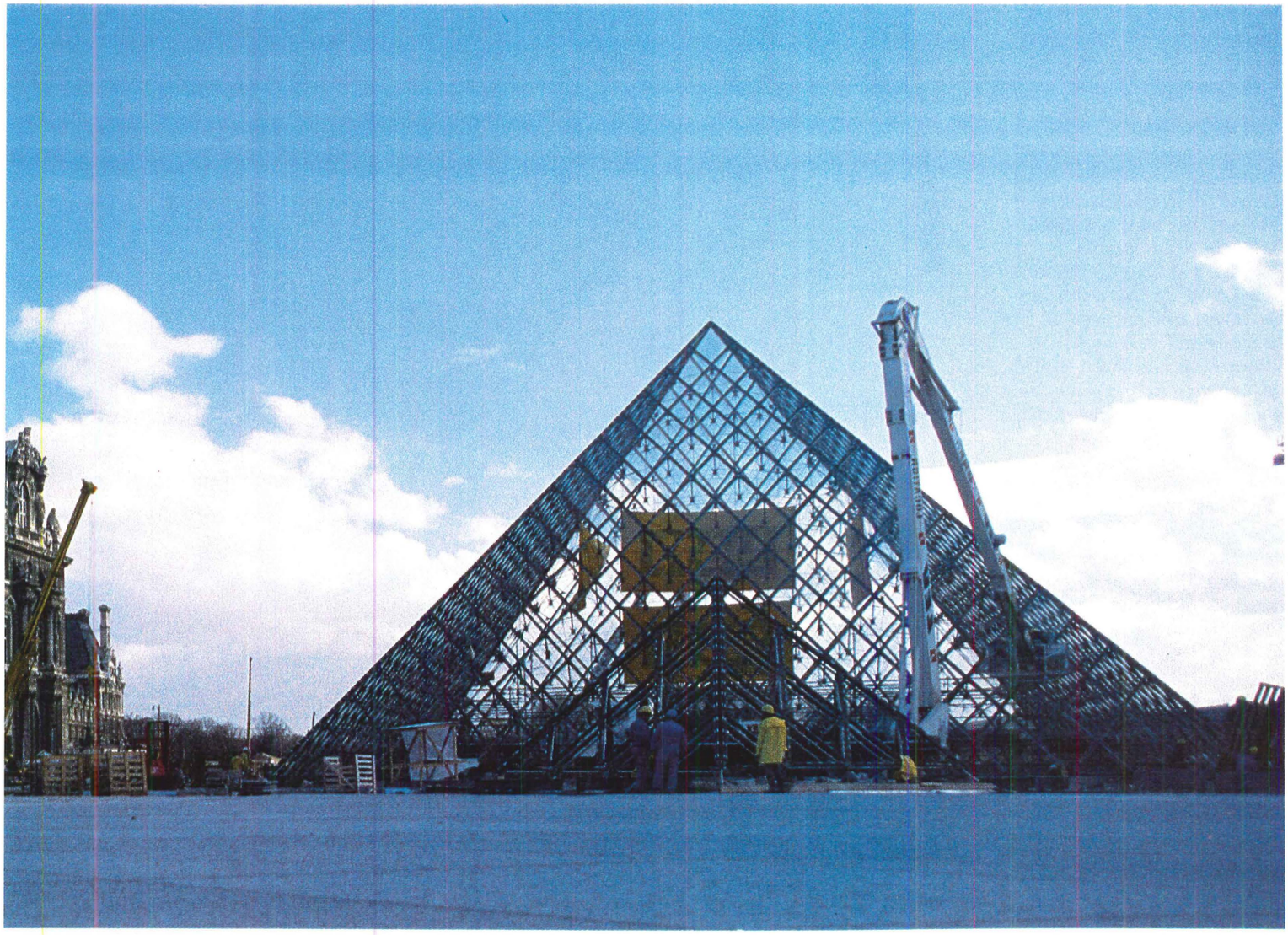


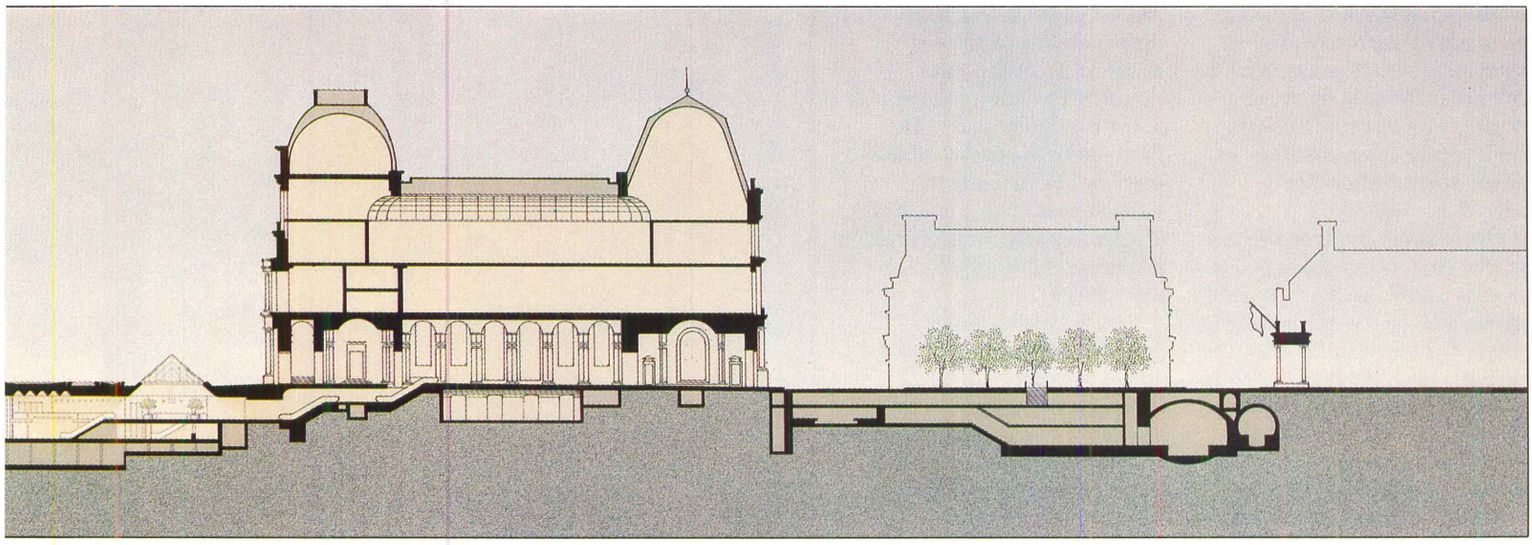
©John H. Sullivan, III photos, except as noted



Transverse section

By the end of this year, I. M. Pei and Partners' new entrance and reception hall to the Louvre will make its official début. The pyramid, as it is popularly known, will enable easy access to far more of the museum's collection than the existing labyrinthine layout ever could. It would be premature to assess Pei's controversial design before the building is finished. But now, with construction still under way, is an ideal moment to scrutinize the project's extraordinary technical refinements, many of which will virtually disappear by opening day. Our progress report reveals an achievement of remarkable complexity and elegance.



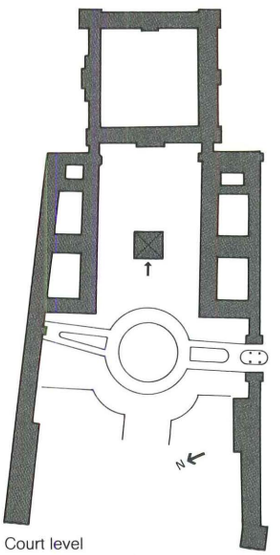


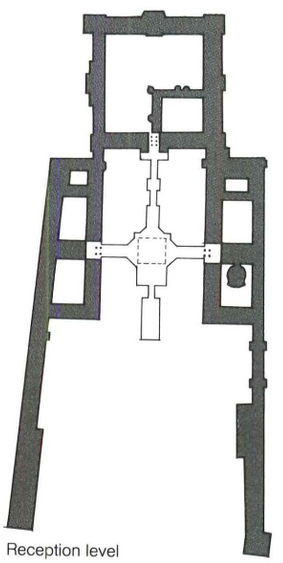
The much-debated 71-foot-high pyramid is "just the tip of the iceberg," says I. M. Pei in discussing the Grand Louvre project in Paris. The metaphor is indeed apt, for not only is the pyramid itself as crystalline as technology allows, it (along with three smaller pyramids) is the only architectural evidence that the vast granite-paved plaza of the Cour Napoléon now covers almost 670,000 square feet of reception, exhibition, and museum support functions. Visitors will enter the museum through the pyramid, which will anchor underground links to the famous U-shaped assemblage of 16th- to 19th-century pavilions.

Among the formidable logistical and technical difficulties now hidden from observers are the below-grade problems of water infiltration from the nearby Seine (the lowest level of new construction lies below the normal water table), and potential undercutting of the historic palace, which has unusually shallow foundations. Since the flooding Seine can raise the water table to within a few feet of the courtyard elevation, a membrane waterproofing system was deemed inadequate. Instead, a foundation drainage network feeds a system of sump pumps (with backup) capable of removing ground water produced by a 100-year flood. To avoid structural disturbance, the primary excavation was set an average of 24 feet inside the perimeter of the Cour Napoléon. Only the passages drilled under and through the existing foundations—*liaisons* linking new to old—and a series of shallow exit stairways (which were among the final elements constructed) encroach upon this zone. As a further precaution, the soil under the existing foundations was injected with cementitious grout to create, in effect, a new bedrocklike substrate.

The intricate construction processes sometimes required a jeweler's precision. For a time the pyramid assembly was actually suspended over its ultimate supports (giant built-up steel box beams) while, sequentially, architectural concrete was formed and placed; structural concrete was formed, placed, cured, and post-tensioned; and the precast concrete courtyard underslab was placed and attached. To fit the parts properly, the substantial camber in the box beams had to be flattened by enormous cables tensioned to duplicate the ultimate loads (top photo, right). The tension was carefully relaxed as the weight of each component was applied.

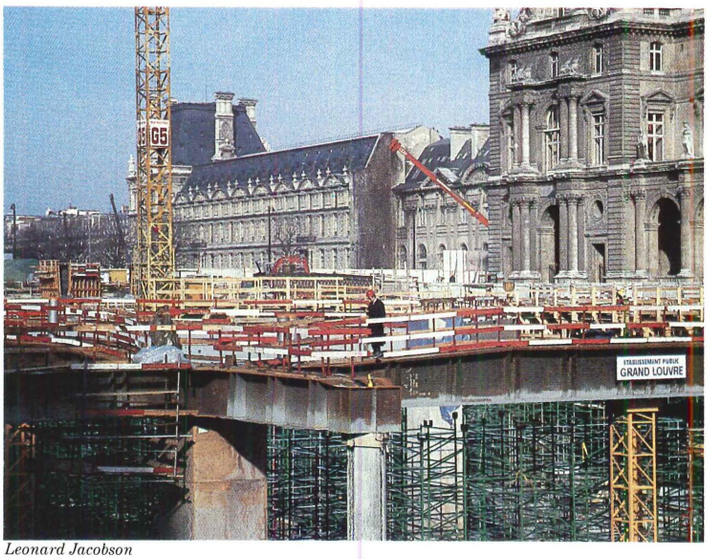
French building codes perversely require far greater egress capacity than corresponding American codes demand. Thus, parts of the plan resemble a Chinese puzzle made of emergency stairs, although there are no exit-stair


Court level


Reception level

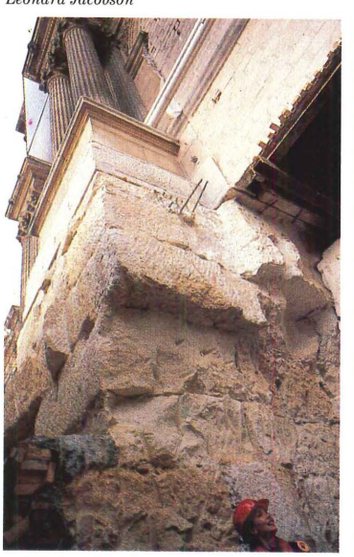
Deck, roof, ceiling

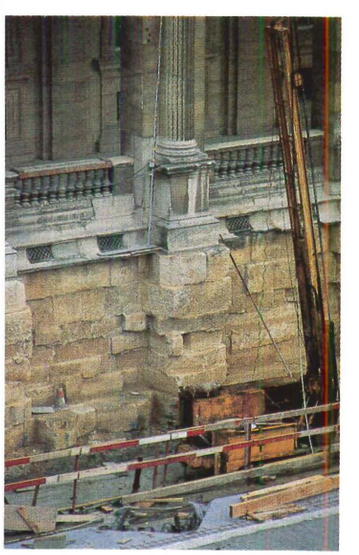
The ceiling-to-deck system was pared down to minimal depth. Mechanical systems normally accommodated above a ceiling serve occupied spaces vertically through chases from a separate "technical level" below the lowest public floor (shaded in section, preceding pages). The



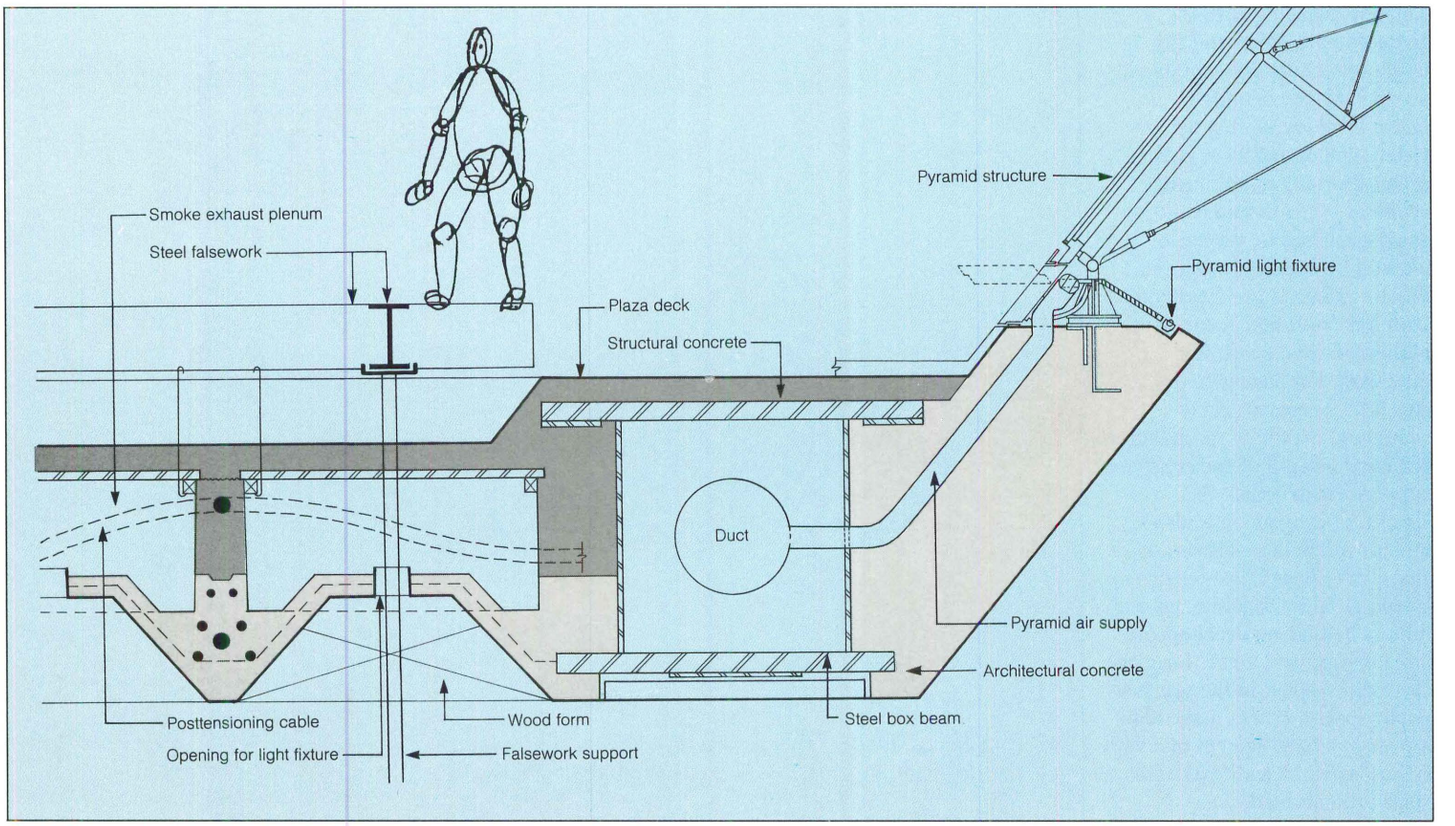
Leonard Jacobson


Leonard Jacobson





drawing below details the cellular deck construction, showing the contractor's method of hanging reinforcing to ensure full concrete coverage at the visible ceiling (below, right). Wood formwork for the coffered ceiling, supported underneath, is shown below left; 3 1/2 in. post-tensioning cables undulate in two directions through wire-mesh reinforcing (middle photo, left). The box beams that support the pyramid are shown in the top photo, left. Yellow scaffolding under the beam prevented damage to highly stressed cables that removed the camber during construction. Excavation revealed 19th-century foundations laid almost haphazardly—explaining, perhaps, how the Pavillon Richelieu got built in just three-and-a-half years (bottom photos, left).





Leonard Jacobson

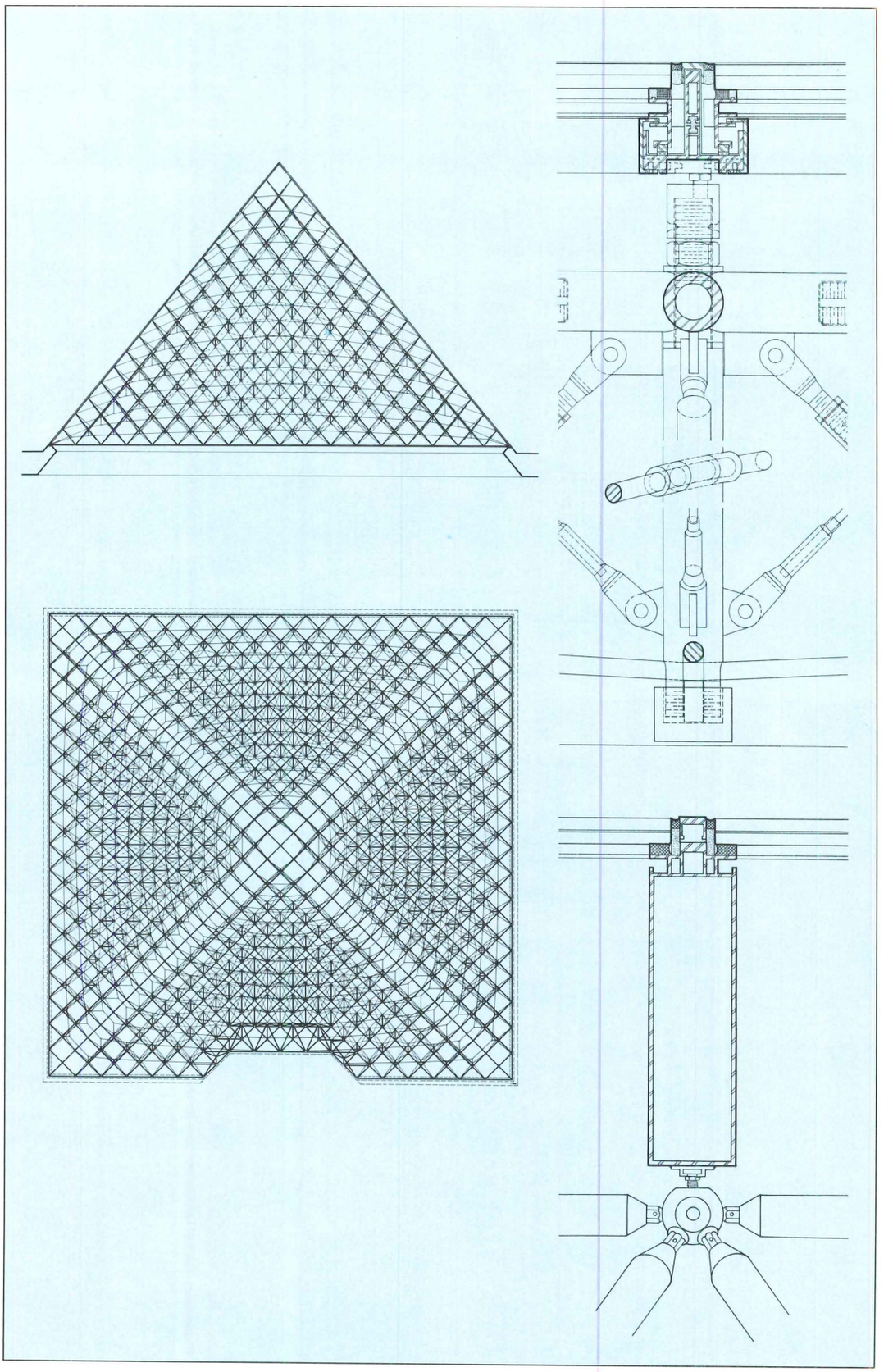


penthouses: trap doors covered by granite paving pneumatically open out of the ground when needed. Some of these passages also act as air-handling plenums with intake grilles in the trap doors set flush with the courtyard. The cellular design of the plaza deck evolved to minimize deck-to-ceiling thickness (thereby reducing both the required excavation and the depth of visitors' descent), and to accommodate a required emergency system for the evacuation of smoke in public areas. (Sprinklers, commonly required by American codes for similar conditions, were not allowed by French authorities.) Smoke exhausts are integrated with light fixtures, in conjunction with interstitial space for ductwork. For strength, the concrete is conventionally reinforced with wire mesh, but, to reduce the depth of the courtyard support construction, this structural concrete was also interwoven with a network of sine-curve-shaped post-tensioning cables. A white concrete, poured first, is both structural support and architectural finish, forming the visible ceiling in the primary public spaces. It was made from a white portland-cement mix with superplasticizer additives to fill voids around the dense reinforcement. The mix results in an exposed finish that matches the tectonic quality of interior facing stone (forms were fitted by finish carpenters from select-grade Douglas fir; ironworkers wore slippers while installing reinforcing to keep the forms clean); C. C. Pei, an associate partner, likens the effect to a room "cut from the earth." The upper pour used conventional structural concrete to support precast concrete deck panels, an asphaltic waterproofing system, a gravel subbase containing drainage, and a finished surface of granite pavers.

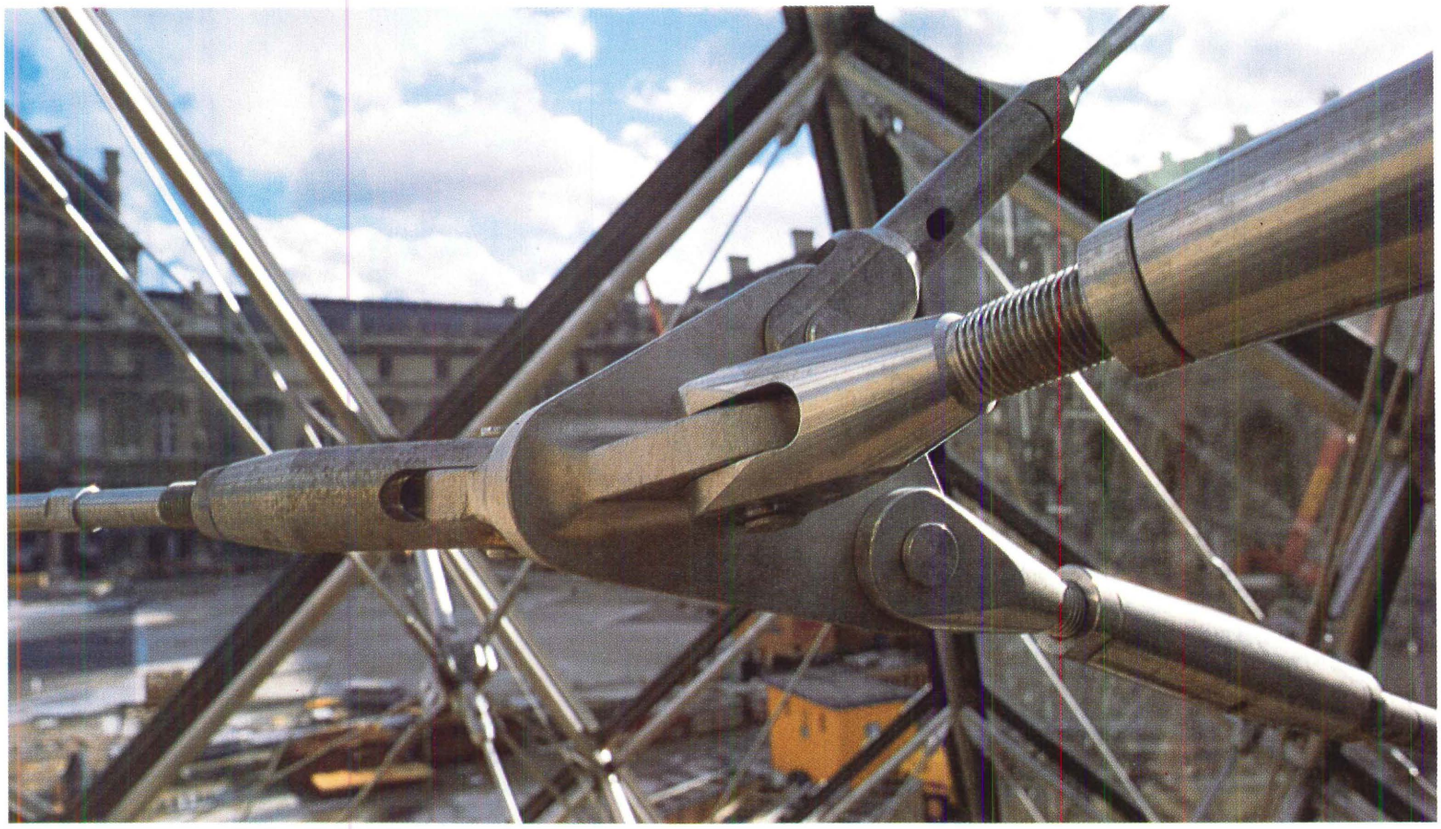
Despite the long history of the pyramid form as a symbol of almost primordial solidity, the Pei firm envisioned *its* version of this form as diaphanous—a minimal intrusion between the modern visitor and the historic stone facades. Thus, the architectural conception required a glass utterly transparent, distortion-free, and—true to the crisp, prismatic geometry—

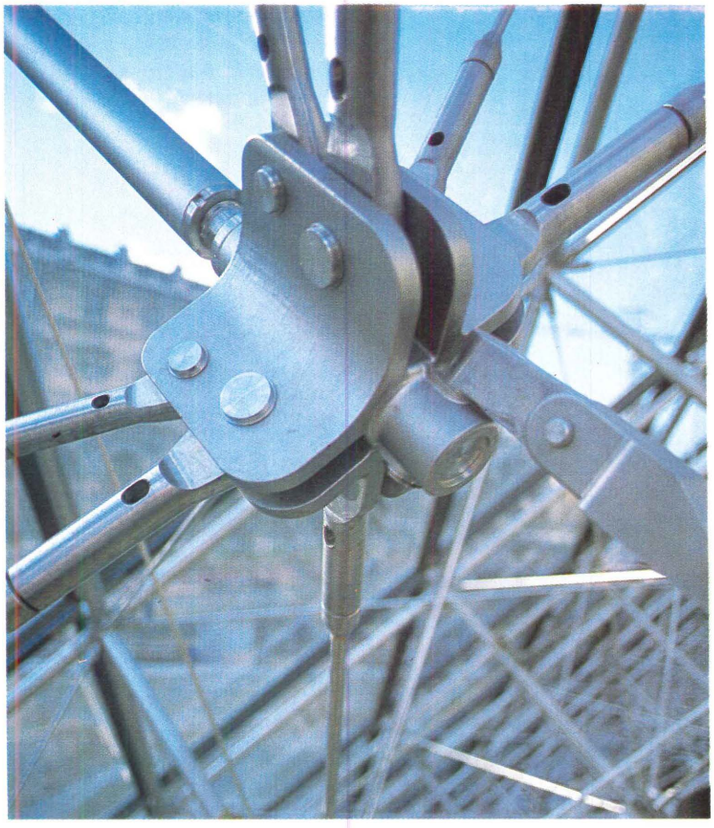
Rigging

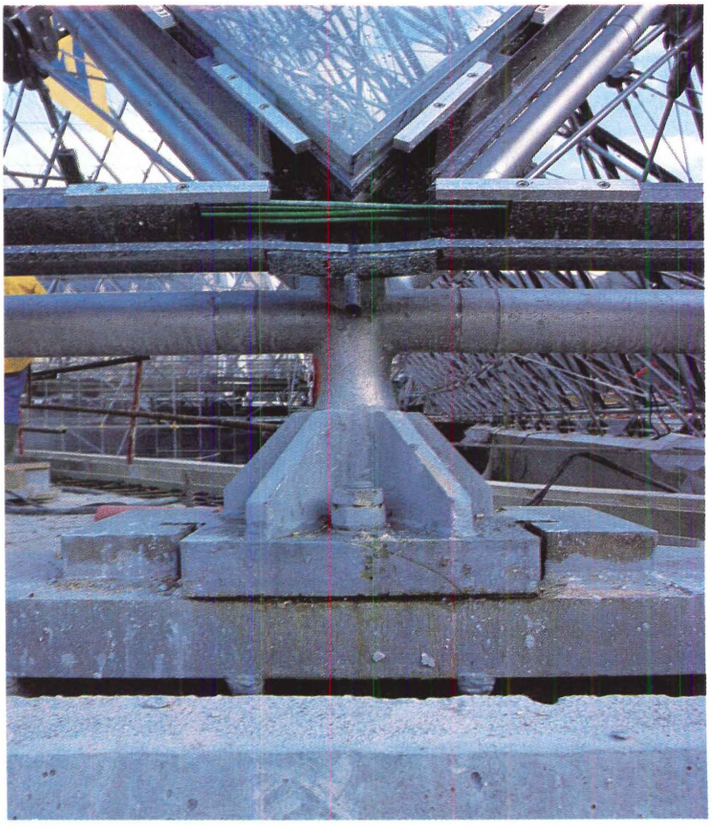
Through an unusual collaboration between Pei's office and a Canadian firm, Nicolet Chartrand Knoll, the pyramid has been designed to reduce the visible mass of the structural support. Stainless-steel bowstring trusses span each plane of the pyramid diagonally in two directions to create diamond-shaped glazed openings. The top compression chords of the trusses are welded together and support the glass; the bottom chords are rods so light that they resemble sailboat rigging. Appropriately, much of the hardware (photos,



below) was fabricated by a Massachusetts firm that has helped build America's Cup yachts. The catenary curve of the truss's bottom chords (section pages 142 and 143) is deepest where both live and dead loads are greatest; concentric counter-cables resist the outward thrust of the pyramid (plan and elevation, left). The lightness of the system is evident by comparing the upper detail, which shows the structure as built, and the lower detail, which shows how the structure might have been assembled using off-the-shelf components. The flush glazing system requires unusually precise adjustment of the skylight support because even minor surface variations would be visible on the exterior (photos, pages 148 and 149; allowable tolerance in the plane is just 10mm—about 3/8 in.).







exceptionally flat. Insulating glass was ruled out as possibly too weak and, in any case, thermally unnecessary; heat-strengthened or tempered glass would have been strong enough, but likely to show stress marks. The architects ultimately chose a laminated system incorporating plate glass. Because the necessary technology has largely been superseded in Europe and the United States by the now-conventional float process, it was difficult to find a manufacturer (ultimately, a French company made the glass, an English company polished it, a third firm supplied the interlayer). Plate glass may slightly distort objects viewed through it, but it is the clearest glazing obtainable; "clear" float glass has a noticeable greenish tint.

Structural silicone glazing is widely used for sloped-glass applications in the United States, but the Grand Louvre is the first such application approved in France. In the detail shown on page 146, the back of the glass sheet is "glued" to the aluminum substrate, and an exterior layer of silicone both seals the gap between mullion and glass, and absorbs thermal movement. The mullion wraps under the glass, providing a secondary seal.

Leonard Jacobson, a partner in the Pei office, points to a particularly subtle detail: a tiny bevel at the rim of the glass, which channels water, makes a clean edge for the sealant, and, unexpectedly, creates a spidery network of rainbows when sunlight hits it just right. Visitors may never notice such minutiae, or the purity of an enclosure unmarred by lighting fixtures, mechanical ductwork, security or smoke sensors—all are accommodated out of sight (see drawing page 145)—but no one will overlook the extraordinarily light, almost tentlike structure of the pyramid, and the simple grandeur of the below-ground spaces. Architectural extravagance has never been lacking at the Louvre, but the Pei firm's expressionistic use of technology has brought a new kind of virtuosity to this French national treasure.
James S. Russell

Research assistance by John H. Sullivan, III

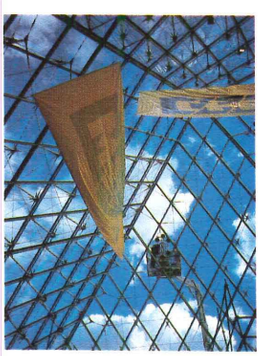
Glazing

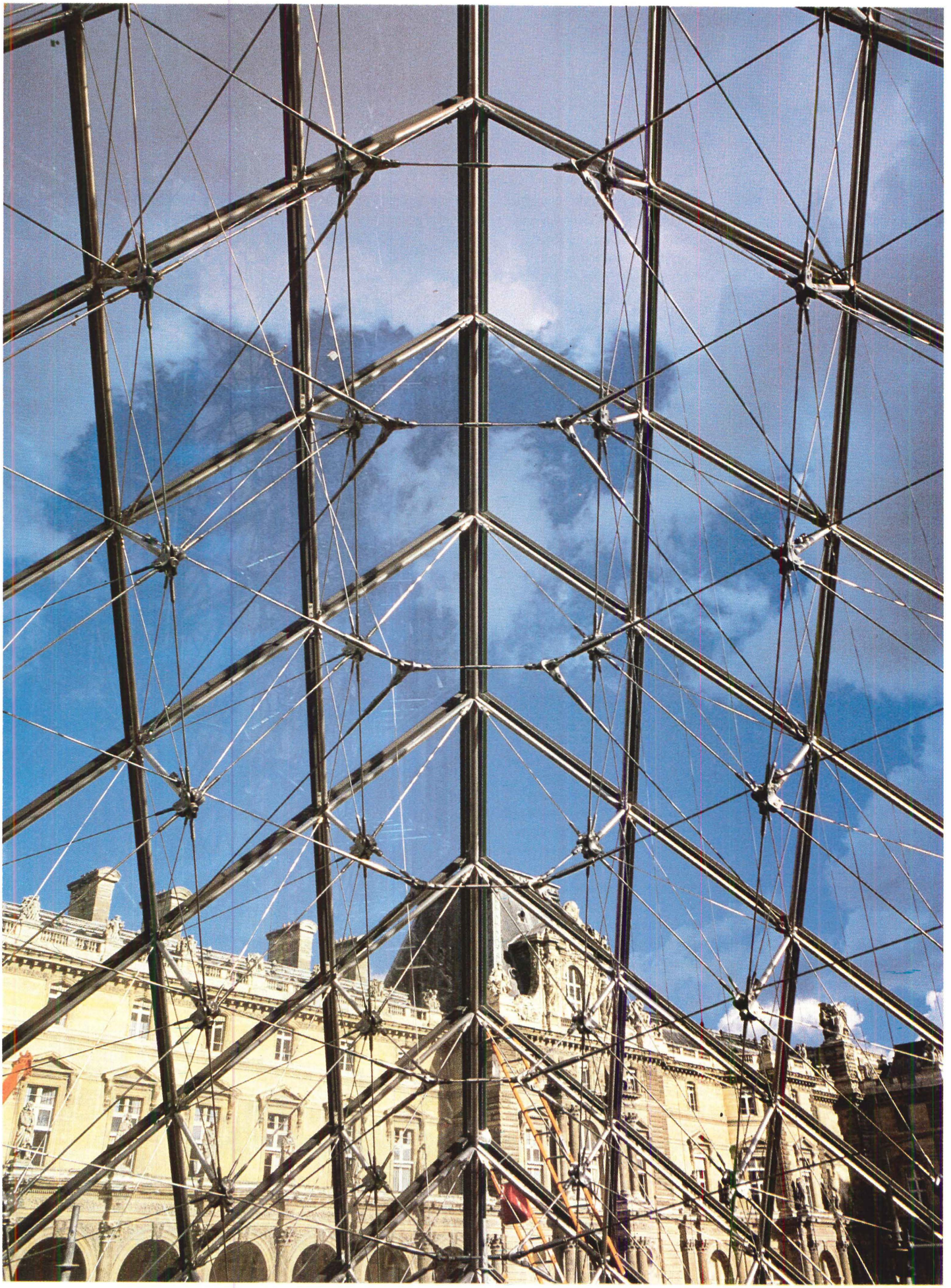
What the French call the "spiderweb" supports custom-made aluminum mullions to which the glass adheres. Silicone glazing obviates the need for an external capping strip, which would disturb the planar quality and trap water, potentially causing leaks. The "unreal" clarity of the glass is no accident. A clear interlayer (to hold fragments in case of breakage) is laminated between two sheets of 10mm (.39 in.) optically transparent plate glass fabricated by a manufacturer of solar-collector mirrors.





The Grand Louvre
Paris, France
Architect:
I. M. Pei and Partners—I. M. Pei, design partner; Leonard Jacobson, management partner; Yann Weymouth, Norman Jackson, C. C. Pei, Arnaud Puvis de Chavannes, Beatrice Lehman, Chris Rand, Masakazu Bokura, Michael Flynn, design/construction management team; Adrzej Gorczynski, Stephen Rustow, Yvonne Szeto, Vincent Wormser, Robert Crepet, Claude Lauter, Ion Ghika, Swein Edvardsen, Elizabeth Cordoliani, Anna Mutin, Ian Bader, project team
Engineers:
SOGELERG, SA (structural, electrical); SERETE, SA (mechanical, electrical); Fred Storksen, SEEE (structural)
Consultants:
Nicolet Chartrand Knoll, Ltd. (pyramid structure design); Rice Francis Ritchie (pyramid construction)
Prime contractors:
Quillery (foundations); DUMEZ Travaux Publics (general construction); C. F. E. M. (pyramid)





New products: Westweek

The big news of Westweek 1988 was that the Pacific Design Center (PDC), affectionately known as the Blue Whale, had spawned a 400,000-square-foot offspring, nicknamed the Green Turtle. Though not yet fully leased, the new Cesar Pelli-designed addition to the PDC contained several of the furniture market's more provocative displays, including Morphosis's ethereal showcase for Vecta, The Imperial Woodworks collection of quirky, attenuated cabinetry, and Fortress's upholstered seating designed by Brent Saville, which incorporates a bold color scheme by painter David Hockney (4). Reflecting its recent reorganization, Knoll devoted a showroom to its collection of architect-designed furniture, now called KnollStudio, introducing a new line of tables by Italian maestro Ettore Sottsass (6).
D. K. D., K. D. S.

1. Files that match
A new program for all Steelcase metal files and storage cabinets, *PerfectMatch* provides designer-specified finishes within standard delivery lead times. Steelcase Inc., Grand Rapids, Mich.
Circle 300 on reader service card

2. Desk chair
William Raftery's *Bira* chair has soft, upholstered edges, and a supportive back panel. Options include a new wood base as well as an aluminum base in polished or colored finishes. Vecta, Grand Prairie, Tex.
Circle 301 on reader service card

3. Leather-covered armchair
Model 415/1 is a new upholstered version of Mario Bellini's leather-covered *Cab* armchair. The down-filled seat cushion is removable; standard leather colors are black, natural, or red. Atelier International, Ltd., Long Island City, N. Y.
Circle 302 on reader service card

4. Modular seating
Designer Brent Saville let artist David Hockney pick the colors for these lounge components. Arm and seating units are completely rearrangeable. Fortress, Inc., City of Industry, Calif.
Circle 303 on reader service card

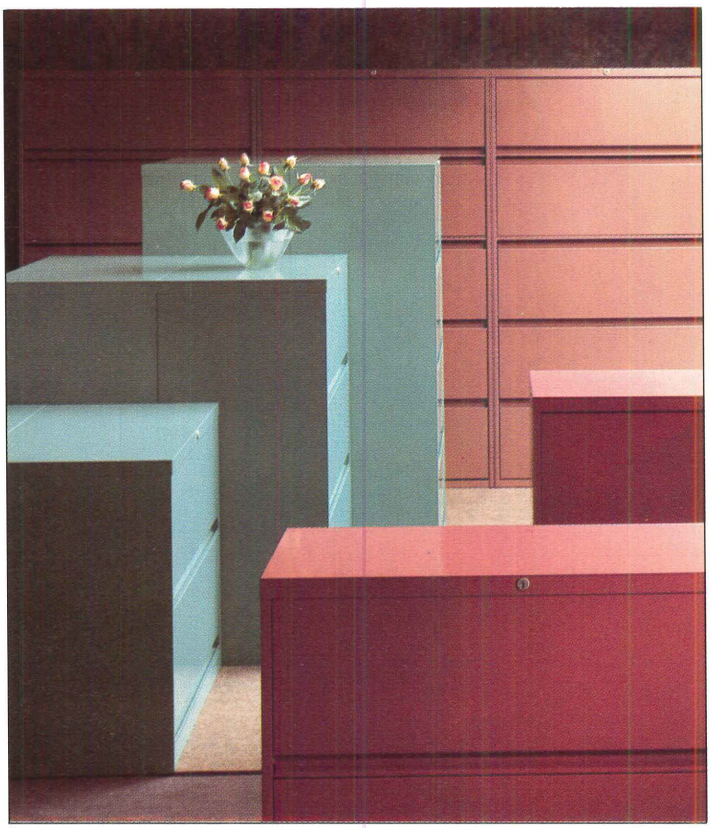
5. Free-form tables
Enzo Mari's *Ambo* coffee table is a glass pond floating on relatively thin bronze sticks. Stainless-steel disks fused to the 3/4-in.-thick top hold the removable legs. Interna Designs, U.S.A., Chicago.
Circle 304 on reader service card

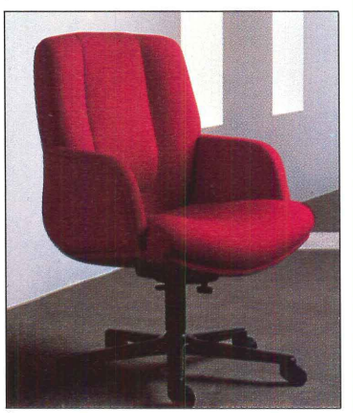
6. Steel and glass
The *Spyder Table* has only half the number of legs, but still resembles its namesake. Designed by Sottsass Associati, the conference table is 53 in. in diameter; tubular legs come in a number of matte or high-gloss finishes. Knoll International, Inc., New York City.
Circle 305 on reader service card

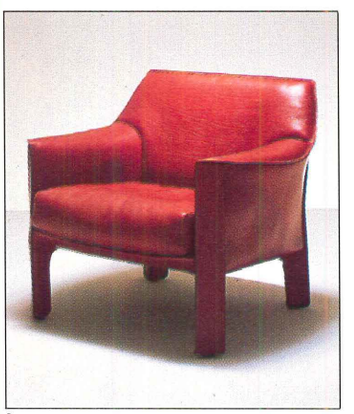
7. Art Deco rug
Originally designed by Ruth Reeves in 1931 for the Grand Foyer of the Radio City Music Hall, *Musical Instruments* is now offered as an area rug, recolored for contemporary interiors (Blue/blue is pictured). Schumacher, New York City.
Circle 306 on reader service card

8. Spare chairs
Designed by Simon Desanta as part of Kusch's *Technomic* office seating line, new executive and guest chairs are constructed with elasticized banding stretched over a steel framework, upholstered with injection-molded foam. Kusch USA, Inc., Centerport, N.Y.
Circle 307 on reader service card

9. Articulating arm
The *Omnific* office chair lets the user change from armchair to armless mode with a simple lifting motion. Designed by Marta Tornero and Bruce Adams, the chair is made of molded urethane in gray, brown, charcoal, red, or blue. Panel Concepts, L.P., Santa Ana, Calif.
Circle 308 on reader service card
More products on page 152

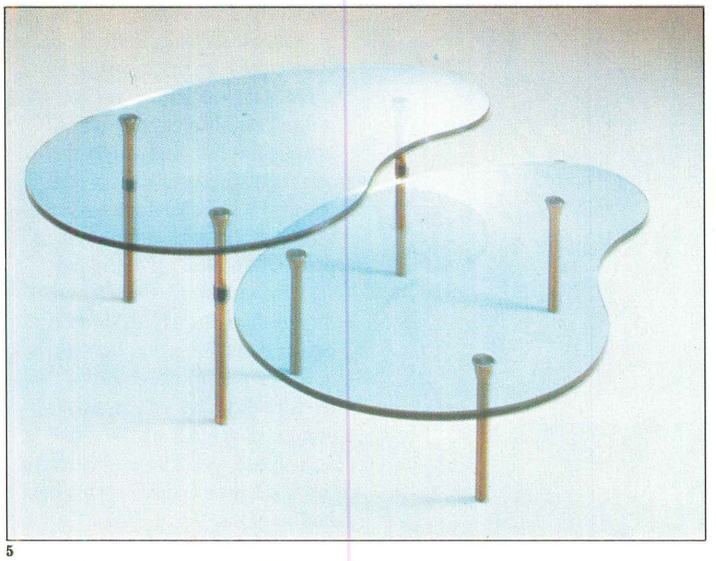

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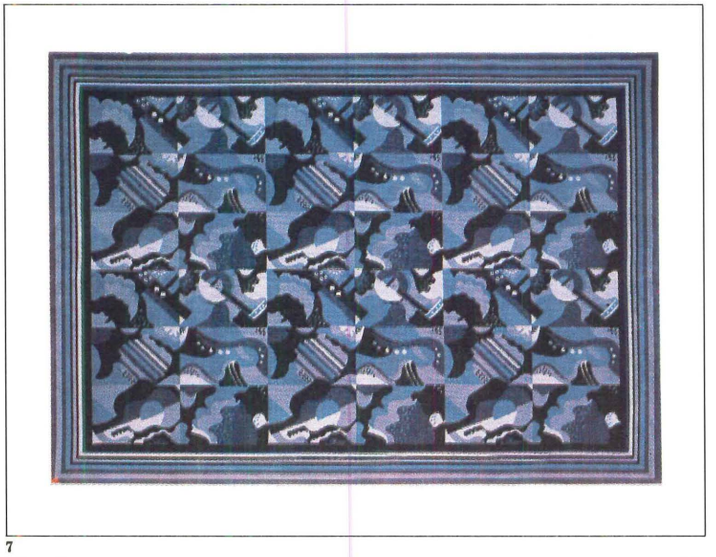
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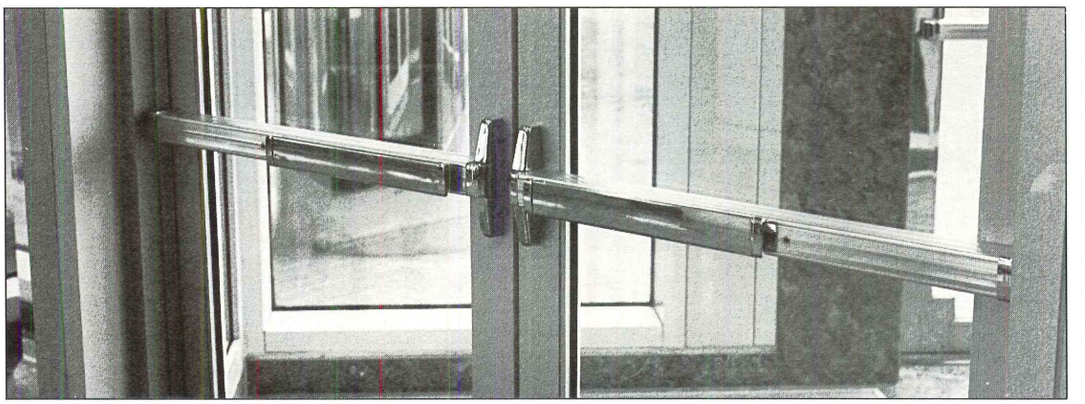
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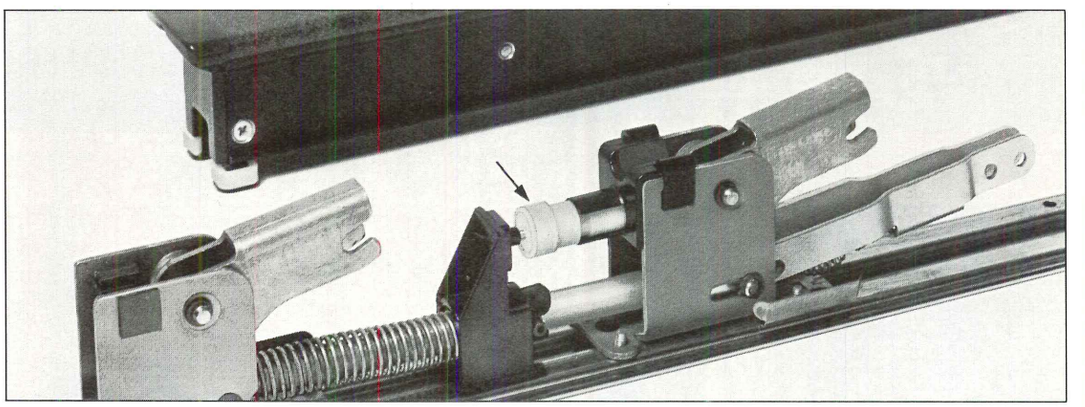


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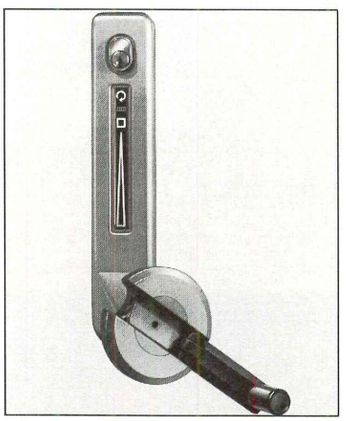
New products *continued from page 150*

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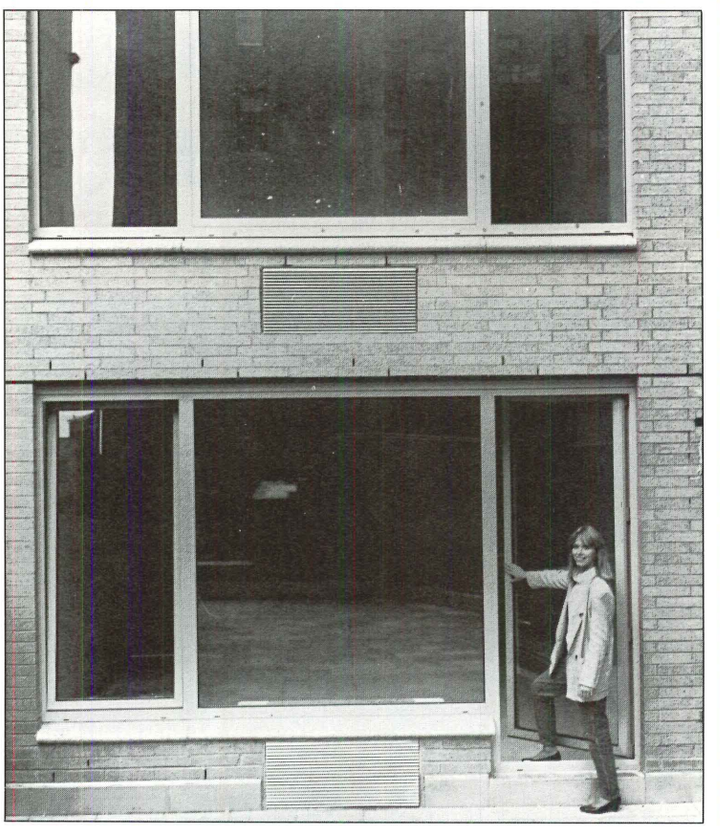




Quiet door operator
Architects Wilson/Jenkins & Associates wanted especially quiet door operators for a suburban Minneapolis office/hotel complex, and worked with the manufacturer's technical representative to advance a new push-bar from development to production. Now a standard feature on the *Series 99* and *Series 33* exit devices, a fluid damper on the guide base (arrow in lower photo) decelerates the push pad on its return stroke, eliminating most of the noise associated with the operation of the touch-bar. Von Duprin, Inc., Indianapolis.
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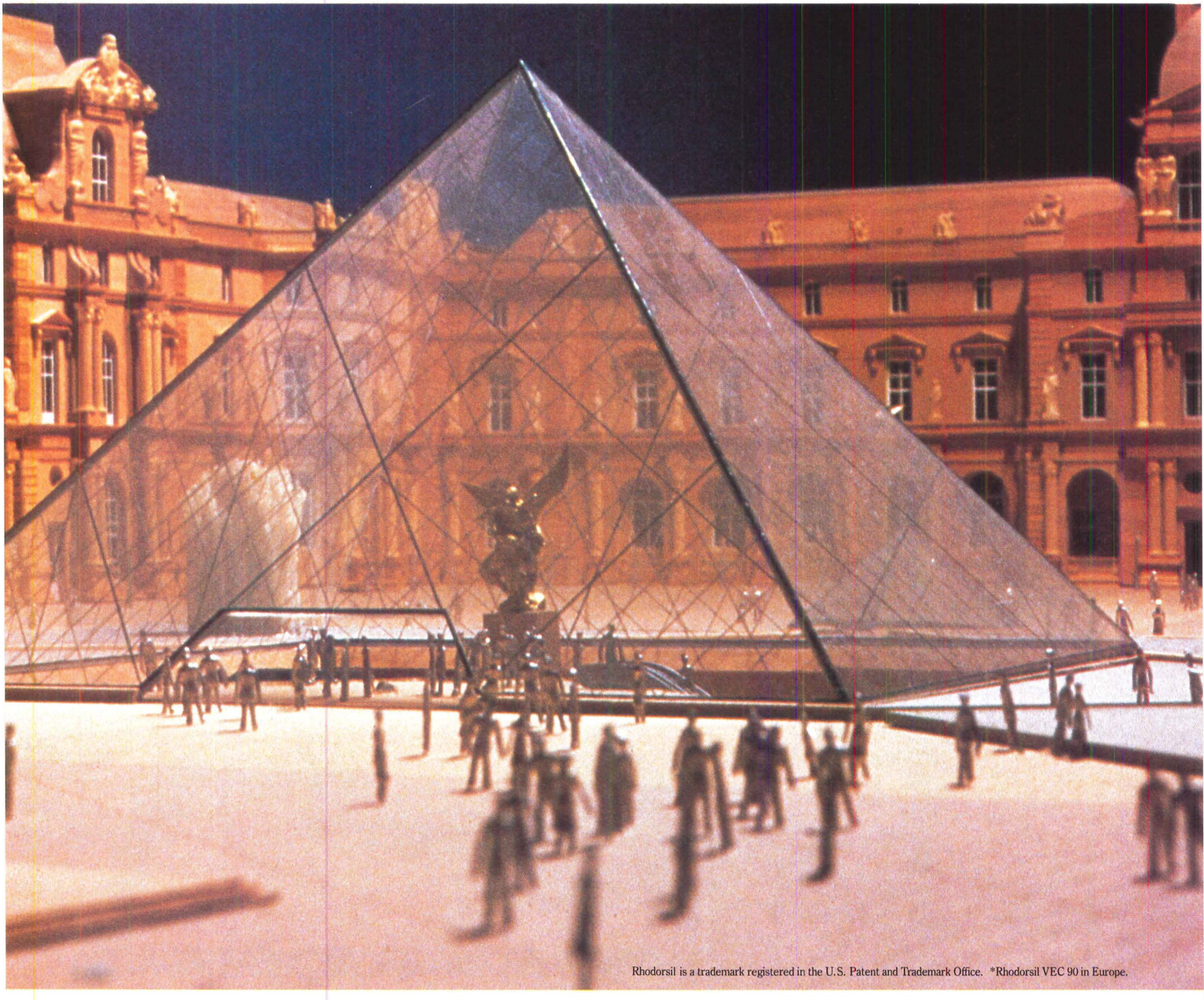






High-rise tilt-turn window
Heavy-duty *EZ Hardware* allows windows as large as 7 ft 6 in. by 7 ft to tilt open at the top for ventilation, as well as swing inward for cleaning both sides of the sash from the interior. Thermally broken, *Designline Series 1200* windows accept unit glazing up to 1 1/4 in. thick; the hardware is rated for a sash weight of 440 lb, permitting the use of sound-attenuating glass. Two regulator arms prevent the window from slamming shut or popping open in wind gusts, even under the significant pressure differentials of a high-rise installation. For fresh air, a turn of the hand crank tilts the window top from a mere crack to an 8-in. opening. The side-hinged cleaning mode can be key-locked without restricting use of the window for ventilation. Wausau Metals Corp., Wausau, Wis.
Circle 310 on reader service card
More products on page 185

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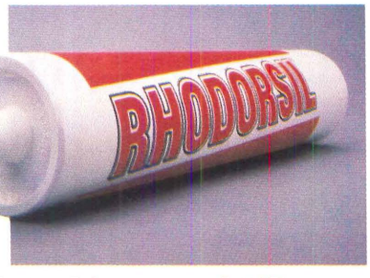
I.M. Pei & Partners Style.

When I.M. Pei & Partners designed the Grand Louvre entrance, they did more than create an architectural masterpiece. They laid out an engineering marvel, where more than 86 tons of transparent glass would be combined to form an apparently seamless pyramid.

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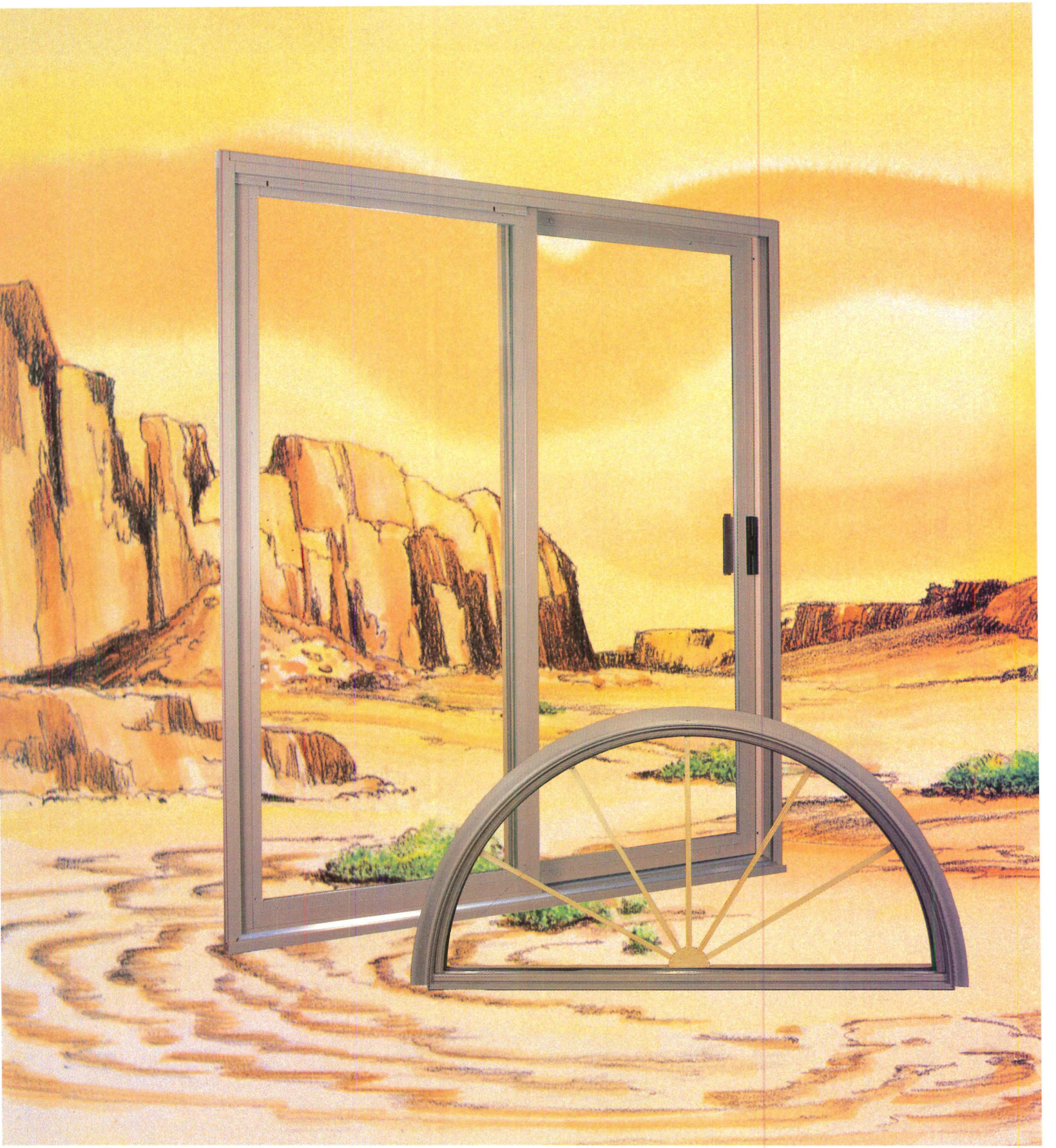
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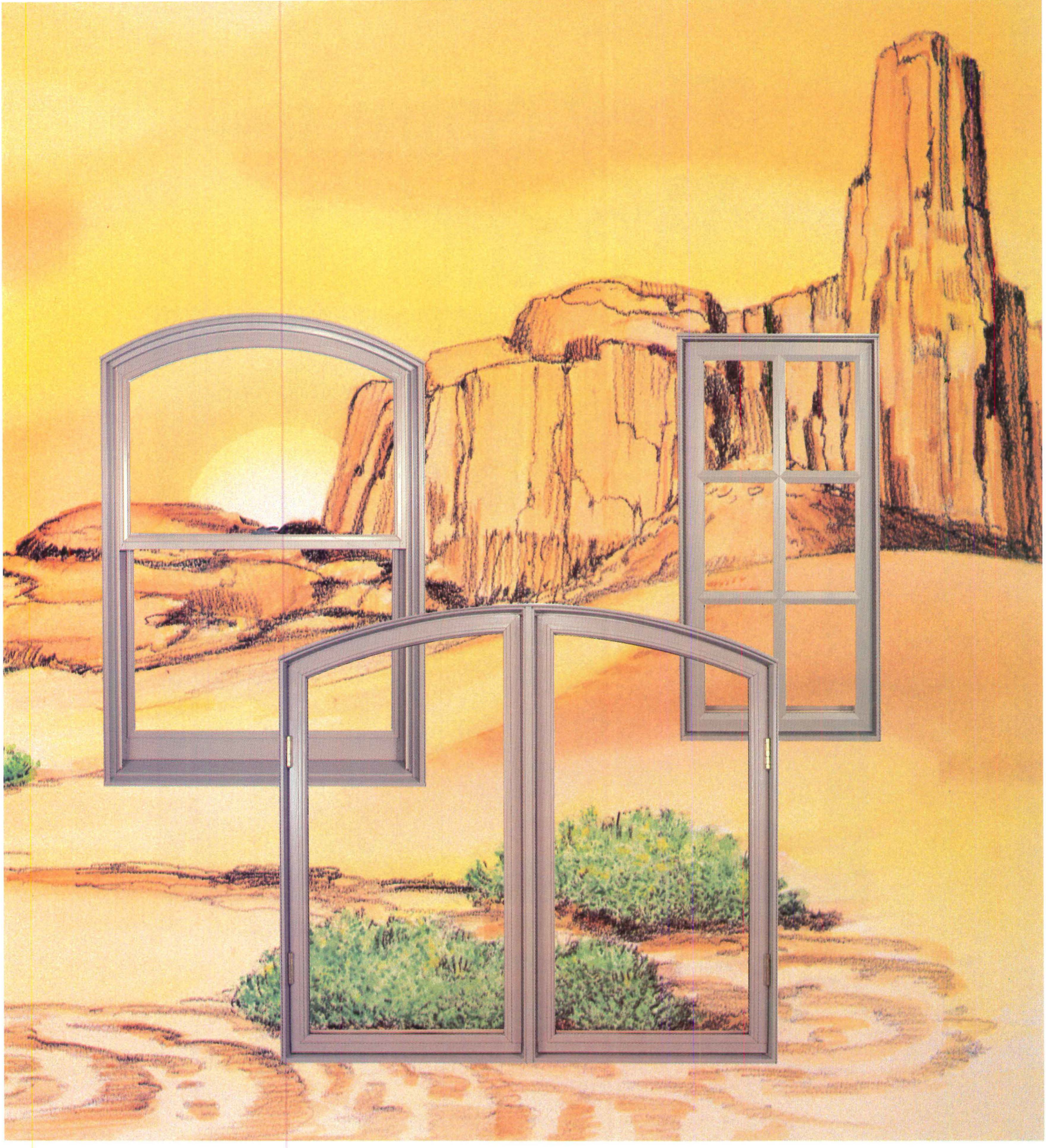


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Computers: Three-dimensional modeling with PCs

A new art form is beckoning, says the author. If architects are to keep pace with a complex and changing world, they can hardly expect to do so using conventional drafting tools.

By Gordon Lee Stubbe

With the advent of the PC, architects are just beginning to realize the expectations that many in the profession have had for CAD. Now there are several fine modeling packages that offer new advantages in viewing conceptual design.

Conceptual design is applying appropriate form, texture, and scale to a given program . . . sort of. However you approach an elusive concept, getting mental images into graphic form is vital. It is even better when you can manipulate those images or see them from inside.

Modeling software can produce wireframe images—lines suggesting surfaces and volumes—or solid models on which surfaces, textures, and colors depict realistic representations.

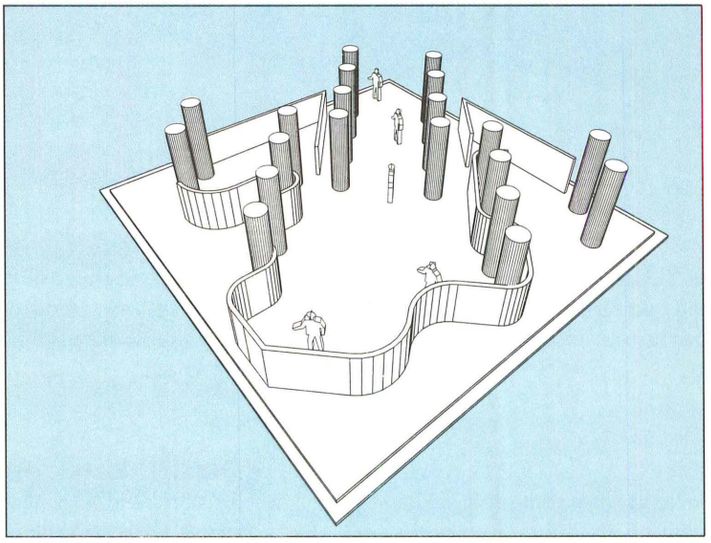
Modeling breaks down into three types:

• *Extruded wireframe modeling* (illustration right) begins with a plan on which the elements are assigned heights to create the third dimension. The software often comes as part of two-dimensional drawing packages. Extruded modeling is an excellent way to study changes to designs that already exist or have limited parameters. True perspective is not always available—nor is the ability to look inside the model. Creating an enclosure for the top of the image, such as a roof, is limited or nonexistent.

Extruded solid modeling is the high end of this type of modeling. It begins with a wireframe that is then compiled (given the attributes of a solid, such as shading) after the plan is finalized. The result appears more realistic and shows color and texture. Lighting from selected angles is available with some programs and can simulate various positions of the sun. But not all software programs have true shade and shadow.

• *Wireframe modeling of volumes* is done by selecting predefined shapes, such as cubes, cylinders, and cones, and modifying them by adding other predefined shapes or editing the basic form. It is much like building with blocks except that surfaces and volumes are described by lines. Generally this software is sold as a stand-alone package. Modification should be easy, quick, and intuitive. There should be no limit on the angles from which the model can be seen. (Some of these programs can also do extruded modeling, which is useful when the concept is developed enough to benefit by having walls more clearly defined.) Sloped roofs, domes, barrel vaults, and parabolic shapes can be created. The configuration of the model is limited only by the designer's imagination or intent. Solid modeling is added through paint programs, which can only render a single view of the model. Once this is done, the model cannot be viewed from other angles.

• *Solid modeling* usually has both extruded- and volume-modeling capabilities. The model is constructed as a wireframe and compiled into a solid. These programs are generally stand-alone packages. The ability to study surfaces on which colors and light sources can be changed are two of the outstanding features. Solid modeling is almost like sculpting with clay, without the mess. The viewing positions are unlimited. However, solid models have the constraint of requiring a large database to keep track of surfaces rather than lines. It takes more time to regenerate different views because of the amount of information to process. This can be partially overcome by selecting the view in the wireframe mode and then compiling it into a solid. In either case, the inconvenience is trivial compared to the results. Solid modeling will produce the most spectacular results and is the direction of the future.



Here are some capabilities to look for in suppliers' packages

Some features to look for in these three types of modeling include hidden-line removal, layers with consistent colors assigned to each item, the ability to enter coordinate data by keyboard, arcs and fillets, walk-through ability (in the more advanced programs), and printer/plotter capability. While solid modeling is spectacular on a screen, a hard copy requires some spectacular hardware. Electrostatic plotters are best, but they are still too expensive for a small office. The alternatives are an ink-jet printer or sending the information by disk to an electrostatic-plotter service. Wireframe images are easily reproduced by either a printer with graphic capabilities or conventional plotters.

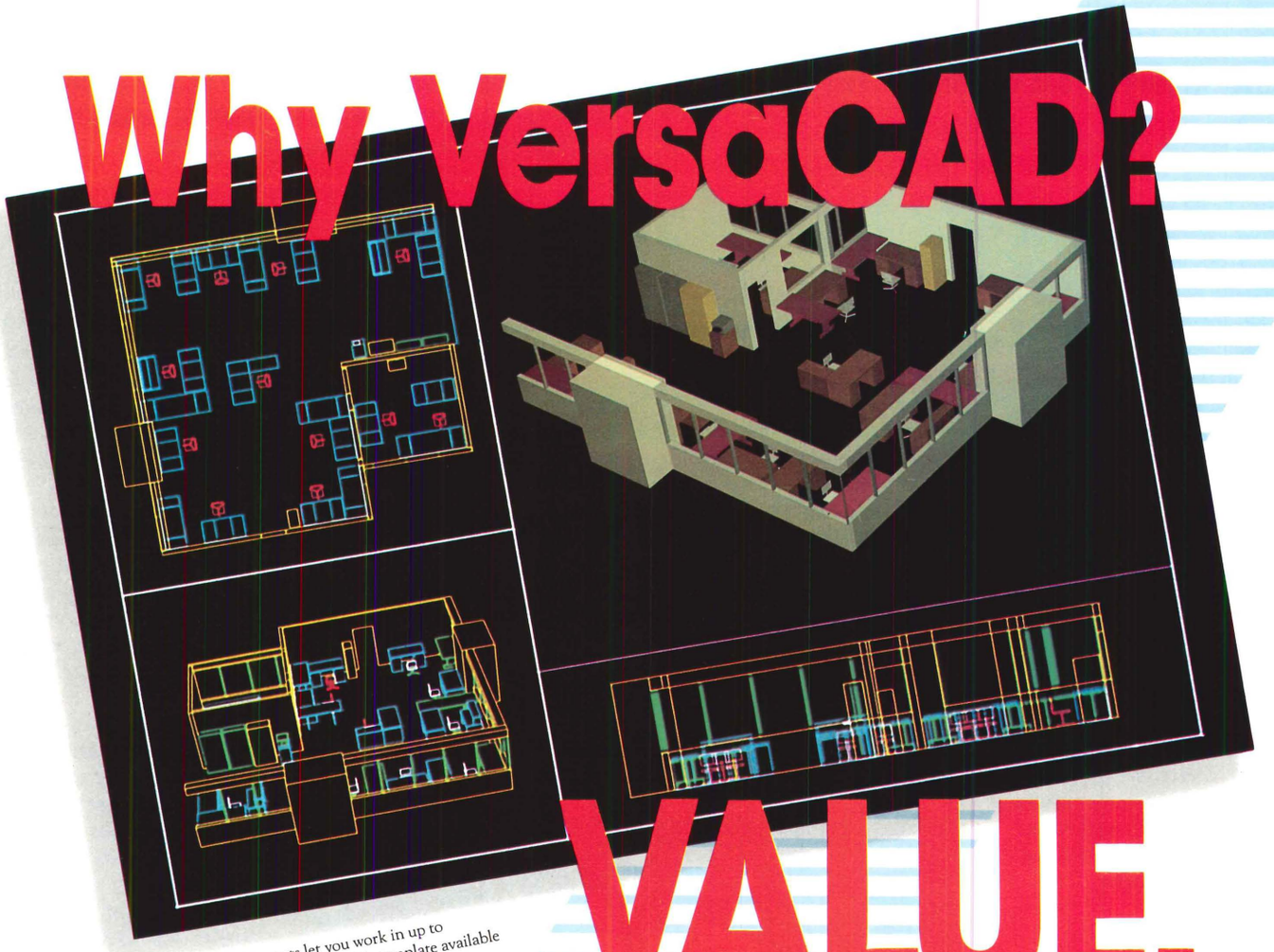
Look before you leap

In selecting and justifying the cost of a modeling program, possible efficiencies should be considered. For instance, if modeling software is used in conjunction with two-dimensional CAD, there is the ability to transfer plans, elevations, and sections from a concept model directly into advanced drawings. A PC workstation with a plotter for three-dimensional design can cost between $10,000 and $15,000. The equipment will be basically the same as that needed for two-dimensional documentation software and is most efficient when time is shared between modeling and more conventional drawing production.

Still, a small office will find it difficult to balance the cost with increased productivity. Hardware and software represent only the tangible cost. The cost in commitment of time to learn the system and become proficient could be overwhelming. The wireframe-modeling programs are generally simple to learn and productivity can be achieved within days. But the solid-modeling programs are much more complicated and will require a longer learning period, measured in weeks to a month or more. Of course, all of this is dependent on the individual and his commitment and ability, which—in terms of long-range benefits—are his only limitations.

Mr. Stubbe is a partner in RAS Architects in Seattle and will create models for other architects on demand.

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Software reviews for architects

Venerable St. Paul's is used in AutoCAD's new version 9.0 to show new user how pull-down menu calls a "display 3-D view" dialog box (below). At bottom is the dialog box set to show plan view.

By Steven S. Ross

AutoCAD version 9.0

The ninth update of the popular, flexible CADD program for UNIX and IBM personal computers. Replaces version 2.62. This latest update is faster, includes a new supplementary menu system, easier transfer between DOS and UNIX computers, more sophisticated curve fitting for easier customization, better handling of 3-D objects, and 20 new Hershey text fonts.
Equipment required: IBM PC, XT, AT, PS/2, or compatibles, 512K (640K to access any add-on programs such as Autoshade), hard disk, coprocessor chip (8087, 80287, 80387), digitizing tablet (strongly recommended) or mouse. Extra memory is desirable; it can be used as a RAM disk or as active, extended memory (Lotus/Intel/Microsoft EMS standard). Supports a wide variety of graphic displays directly; manufacturers often supply their own special drivers for AutoCAD as well.
But not all displays will work with the new menu system—the Advanced User Interface, or AUI. Those that definitely do work among DOS systems include: CGA in monochrome mode, EGA, IBM VGA, IBM 8514, Compaq Portable III gas plasma display, and Hercules. There are versions of AutoCAD 9.0 that run on Apollo, Sun, or DEC VAX.

Printers and plotters are either supported by AutoCAD directly, or through AutoCAD ADI (Advanced Device Interface); we have yet to find a modern system that does not provide an ADI driver for AutoCAD. Drawings can also be printed to a disk file, then sent to a printer using the DOS PRINT command.

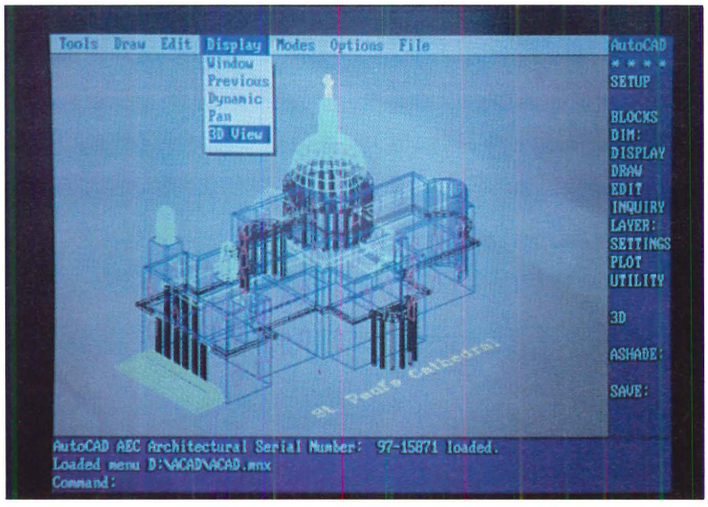
Mr. Ross is a prominent computer consultant and a regular contributor to RECORD.

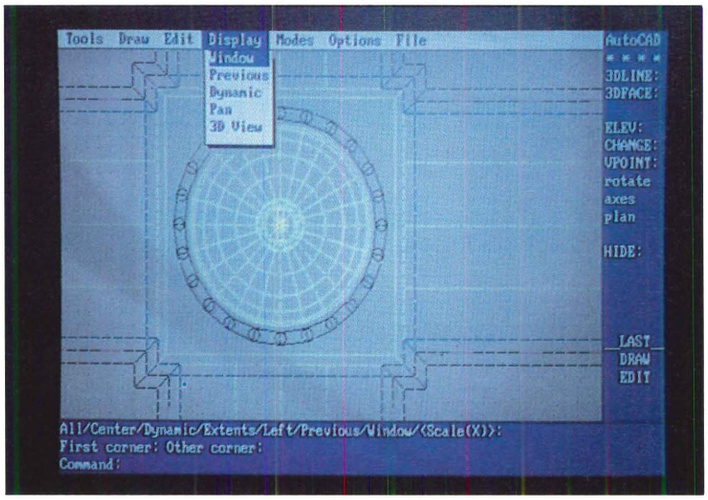
Vendor: Autodesk, Inc., 2320 Marinship Way, Sausalito, Calif. 94965.
Price: $2,850.

Summary
Manual: Fine for those who are upgrading from earlier versions. Features added since version 2.5 are in a separate booklet.
Ease of use: Good. There are now four ways to get information into AutoCAD—the command line, the command bar, the ADE digitizer template, and the new AUI. On-line help is sparse. As with earlier versions, memory management is touchy; AutoCAD stretches DOS limits to the utmost. Treatment of 3-D is a bit awkward.
Error-trapping: Excellent. AutoCAD warns if you are about to overwrite a file or quit before saving updated work. The AUI includes lots of dialog boxes to warn of problems. Even failures of add-on programs generate an error message (at least an "unrecognized command" notation) through AutoLISP.

Is version 9.0 good enough to spend $150 (the upgrade price if you already have version 2.62) or more (for upgrading earlier versions)? The answer is yes. Even if you don't use the new pull-down menus, the new version's extra speed and drawing features make the upgrade worthwhile. For those few current users who haven't installed a coprocessor chip, add that cost—about $100 for an 8087, $250 for a fast 80287, and even more for the 80387. And it's still worthwhile.

The speed increase isn't uniform, however. Pans, zooms, views, and redraws were sped up in version 2.6, for 2-D operations that don't require a full screen regeneration. They were also made transparent. That is, they can take place while other commands are running. Version 9.0 seems even faster. Hidden-line removal still takes a long time for complicated drawings.





Working in 3-D has been getting less cumbersome, although it still has to be done by sticking little primitive 3-D shapes like cylinders and spheres together to make the desired overall shape. One 3-D shape can't be overlapped onto another, though, so some attention has to be paid to the mating of the surfaces—much like gluing a model together. Routines for generating those shapes are in AutoLISP, for which you should have 640K.

Version 2.6 allowed users to rotate a 2-D curve through space to create a 3-D object with a complex face more directly. Version 9.0 makes this easier by allowing more flexibility in creating the initial 2-D curve.

There's now a "spline" option in the PEDIT command. With PEDIT, you define a curve by specifying points. The "polyline" drawn through the points consists only of arcs and straight lines; it usually appears steplike. With spline, the curve is attached to the endpoints, but does not necessarily pass through all the intermediate points; the curve is only "pulled" toward them. That's also different from the old PEDIT FIT specification, which forces the curve through all the points. The term for this type of curve is a "cubic B-spline." The resulting curve is smoother than that obtained with the FIT subcommand. The spline curve is considered "real" by AutoCAD.
Continued on page 161



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Software reviews continued from page 159

Even if you don't use the new pull-down menus, AutoCAD's new 9.0 version's extra speed and drawing features make the $150 price of the upgrade worthwhile.

That is, when you snap another object onto it, the object "sticks" to the spline curve, not to the underlying frame defined by the points. Objects can now also be snapped to the top edge of an existing 3-D extruded object.

True 3-D perspective drawings can be imported as slide files from AutoShade [RECORD, January 1988, page 122]. There are also a number of ways to repeat a command or to cycle a group of commands. The easiest is to start a command with an asterisk followed by two CTRL-C combinations if you know you'll be repeating them. Then the object of that command will be repeated until another CTRL-C is issued. If the same command will be performed over and over, start it with the word MULTIPLE, and stop it with CTRL-C.

Perhaps the most useful feature of the AUI with its pull-down menus and on-screen dialog boxes is its easy modification. Out of the box, AutoCAD comes with seven options on the menu bar at the top of the screen: Tools, Draw, Edit, Display, Modes, Options, and File. You can modify these, or add up to three more. The dialog boxes invoked by the pull-down menus are also easy to create. For instance, you can create a menu invoking special symbols, then put as many as 16 of those symbols in an "icon" dialog box. Architectural firms are already using the feature for their own purposes, and suppliers of add-on products say the integration of their software with AutoCAD can now be made virtually seamless.

The 20 new fonts do not exactly replace the three old ones supplied as standard; there are new versions of the old three with better spacing. But the old fonts remain so that existing drawings can be used with version 9.0.

Memory management is tricky. AutoCAD now recognizes and grabs any EMS memory it finds. This may interfere with use of add-on programs that also use EMS memory, so a new command, SET ACADLIMEM, has been added for use with DOS batch files. This allows AutoCAD to reserve only part of the EMS memory, the same way SET ACADXMEM allows management of "expanded" memory for RAM disks. What if you want to use some memory above the normal 640K DOS limit for a RAM disk, and some as EMS memory? Follow installation instructions perfectly, or risk overwriting sections of drawings stored in such memory.

Drawing files (with the AutoCAD extension, .DWG) can now be transferred between DOS and UNIX systems without going through a .DXF conversion step. So can AutoLISP programs as long as certain file name conventions are observed. To allow this, version 9.0 does not accept compiled menus (.MNX files) from previous versions. If you have an add-on program that's running with an earlier version of AutoCAD, simply put the source code into the same directory as the .MNX file. Version 9.0 will automatically compile it into a .MNU file.

How does AutoCAD version 9.0 compare with VersaCAD 5.3 [reviewed in RECORD, February 1988, page 147] as far as architects are concerned? Both allow file portability. AutoCAD's shading program is far more versatile, but it is not totally built-in and costs an extra $500. AutoCAD's menu system is a bit easier to float around in because it is not quite as structured; it allows certain functions to be done in any order whereas VersaCAD often forces more discipline. VersaCAD's 3-D module is superior, both for creating drawings and for viewing them. AutoCAD promises new enhancements in that area soon.

Space version 2.15

A space-planning package that allows architects and interior designers to optimize space placements with regard to their sizes and affinities, and to generate clear blocking and stacking diagrams showing the results. Data input is through on-screen "spreadsheets" that allow users to play "what-if" exercises—checking layouts' practicality and costs with growth or shrinkage scenarios. Exchanges files with AutoCAD, VersaCAD, any graphics programs that can read and write .DXF files, and FM:Forecast.
Equipment required: IBM PC, XT, AT, PS/2, and compatibles, 384K (512K strongly recommended), two floppy drives or one floppy and a hard disk (hard disk recommended) coprocessor chip (8087, 80287, 80387) strongly recommended. CGA, EGA, VGA, Hercules monochrome, AT&T regular or Display Enhancement Board, Tecmar Graphics Master (the demo version can only be viewed completely with EGA graphics). Mouse (or digitizing tablet in mouse mode) strongly recommended. Dot-matrix printers using Epson/IBM or Okidata control codes, or laser printer emulating the HP LaserJet Plus.
Vendor: Graphic Systems, Inc., 180 Franklin St., Cambridge, Mass. 02139. (617/492-1148). Bundled with FM:Forecast by AIA's Professional Systems Division.
Price: $695 as stand-alone from Graphic Systems. Upgrades from earlier versions are available. Full-featured version good for 20 work sessions is $50 (applied toward full price). Demo, showing sample screens and menus, is $5.

Summary
Manual: Detailed and well-organized. On-screen appearance of version 2.15 does not quite match the manual's illustrations in all cases. Installation instructions can be followed precisely for users with hard disk as drive C; others will have to substitute their own drive letter in the instructions.
Ease of use: Good. The program menus are intuitive and the screens are gorgeous on both EGA and Hercules monochrome monitors. On-line help is context-sensitive (that is, invoking the HELP key gives users help with whatever menu they find themselves in). The report-printing facilities are primitive (see full text) but can often be bypassed if you exchange data with a graphics program. Moving back a screen requires hitting the F7 key rather than ESCAPE, but users quickly get used to it.

Configuration is easy. If you are using a digitizer rather than a mouse, however, you will have to go back and invoke the digitizer's own mouse driver (then cancel the mouse driver and reboot to run your graphics program with the digitizer in the normal, "absolute" mode). For quick update sessions, digitizer users may find using the keyboard for all screen movement is easier. Configuration does not update any DOS path command that might be in your AUTOEXEC.BAT file. Each floppy disk or hard disk subdirectory can only contain the files for one project.
Error-Trapping: Good. Updates do overwrite previous files of the same name. That's a special problem for existing users of older versions, which use a different file structure. The old files can be read by the new version, but once they are overwritten they cannot be read by the older version.

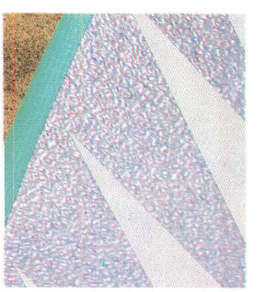
Juggling clients' space needs has never been a pleasant chore. Now, with clients demanding flexibility to cover future eventualities, it helps to be able to present numerous alternatives
Continued on page 163



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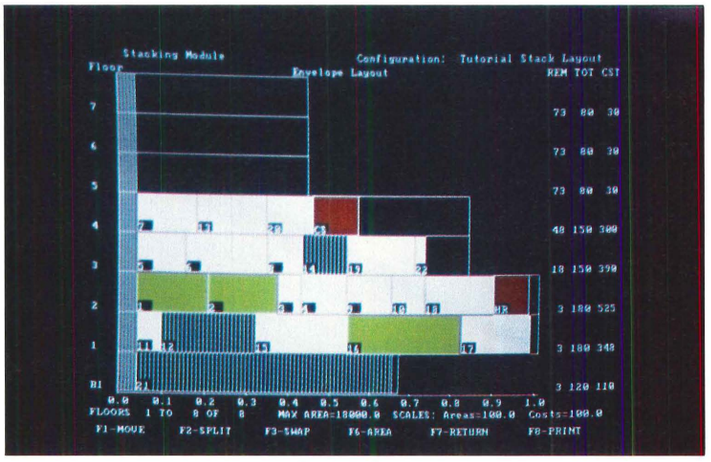
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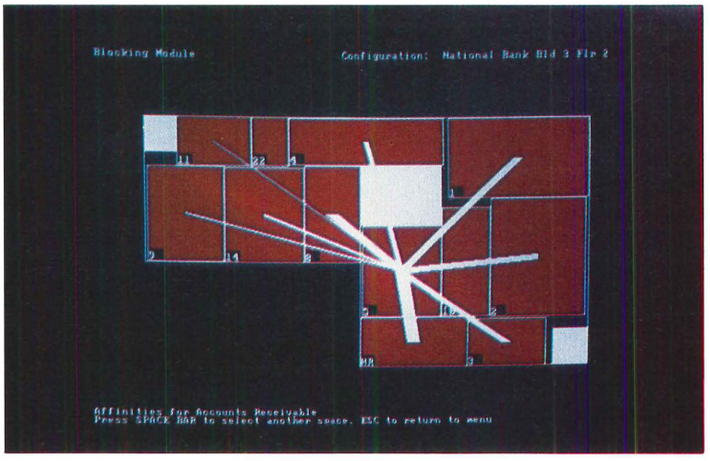
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Space version 2.15 helps architects place spaces in relation to size and affinities, and to generate blocking and stacking diagrams. Below is a stacking-module, envelope layout for an eight-floor building with basement, showing floors one through four. At bottom is the blocking module showing space affinities for one department (accounts receivable) on a given floor. Line thicknesses get heavier as affinities get heavier. "Clever," says the author.





and to update them at will. To start the process, you first "define" a project by giving it a name, optional code number, and (usually) your name. Next, you create a data directory to hold information about a specific project. The directory entry has room for a short description, your initials, a client identifier, and the identity of the person responsible for updates. Space now gives you the opportunity to actually specify spaces—reception area, offices, conference rooms, accounts receivable, or whatever. The specs are entered on a screen that allows you to specify the name or function of each space, a symbol-code for it, its area (you can use whatever units you wish, but they must be consistent throughout the project; if you start with square feet, you can't switch to square meters later because Space doesn't keep track of units), the building floor, whether or not the space will be fixed or flexible, and the desired length-to-width ratio (a 12 x 12 room would have a ratio of 1.0).

Users also have the option of setting up a report summarizing the data above, along with such items as cost per square foot for each kind of space, and the total amount of each type of space from each floor. Once these data are in place, you can define the strength of affinities between spaces. There may be, for instance, a strong affinity between conference rooms and executive office spaces, or between marketing and accounts receivable. The defining is done on a screen that looks something like a Lotus 1-2-3 spreadsheet, with the various spaces listed along both the vertical and horizontal axes. For each intersection of a row and column (signifying the relationship between two spaces), you specify the importance of adjacency by entering values from a numerical scale (1 to 4 indicates a positive adjacency, 5 is neutral, and 6 to 9 a negative adjacency; it takes some getting used to).

A nice touch: Marketing might have a strong affinity for accounts receivable, but accounts receivable, with more general responsibilities, might have a weaker affinity for marketing. In other words, the matrix does not have to be symmetrical. For each floor, Space arranges the areas to give you what it considers the optimal layout as far as your adjacency matrix specifies it. You can then force things to change them. Lines connecting the spaces denote affinities—thick lines for strong affinities, thin lines for weaker ones.

In use, the most common editing I found is in the shapes of the spaces. If you specified a 12 x 12 space and the most humanly obvious shape for the space in the plan turns out to be 10 x 15, respecifying gets the program to fit it in. Or, you can flip the long and short axes of a rectangular space to increase chances of wedging it in. With irregular floor plans, it is easy to move spaces around into odd corners. The rest of the floor can then be re-allocated by the software.

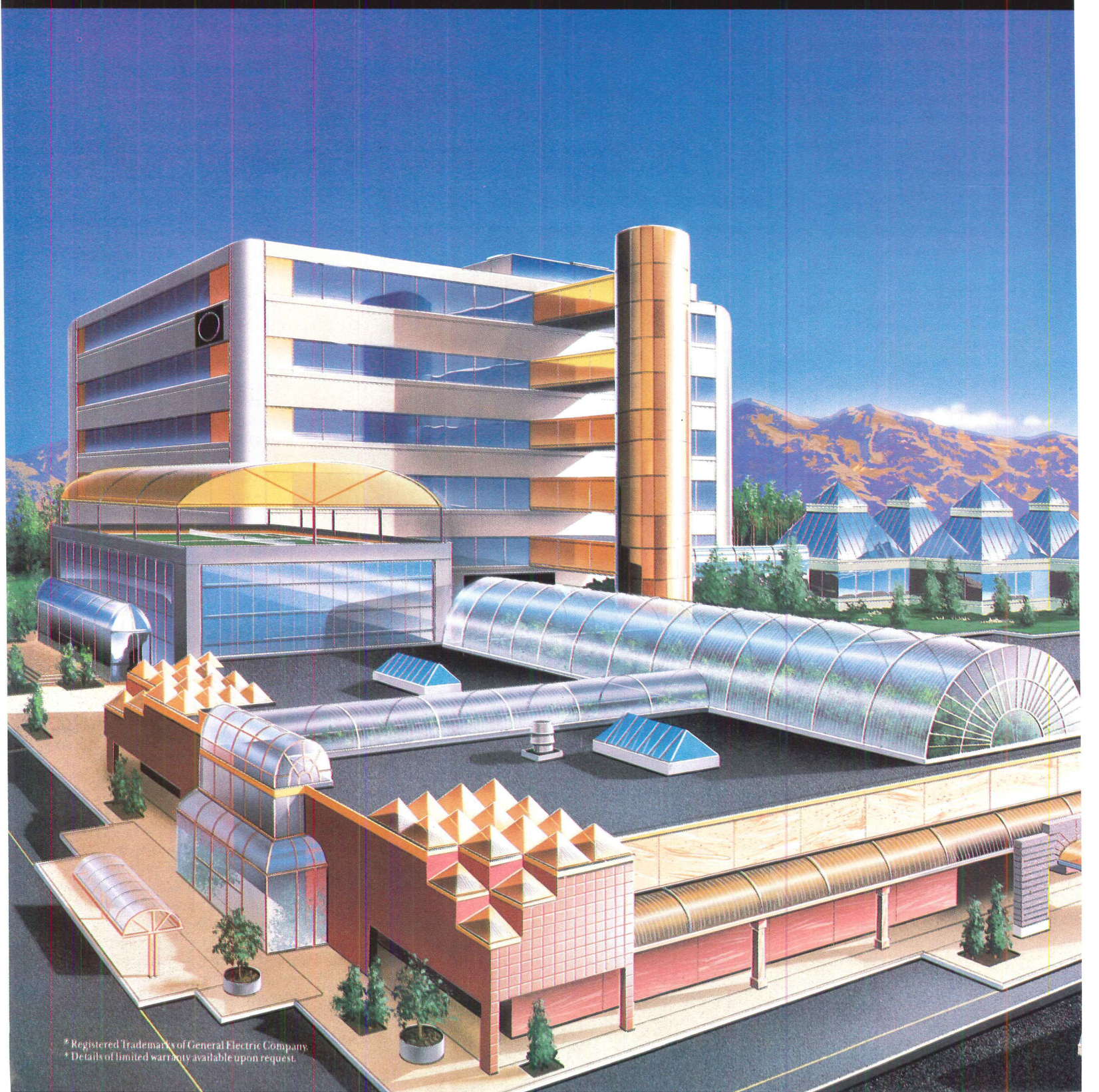
For buildings of more than one story, Space can also produce what the software calls a "stacking envelope" that shows space allocations floor-by-floor. One minor limitation: the stacking is done from the ground floor upward. So if you want to make sure the CEO gets the choice corner office on the top floor, put it there to begin with. The shapes of the floor plans and building profiles can be created from within Space (a mouse is handy for that), or imported from a graphics program. Either way, you can specify inviolate space such as elevator or restroom cores. Space can handle up to 50 different types of spaces per floor, 150 spaces per building, and up to 75 floors per project. You can fake the program into allocating spaces across several buildings, in a pinch, by making each building a separate "floor," then splitting the floors apart and reallocating space in each to as many floors as you need. But if you do that often, you might very well want a minicomputer program instead.

Exporting all this to your graphics CADD program is easy. Enter a file name, a disk subdirectory to put the resulting .DXF file into, and let Space do the work. That's good, because printing from the CADD program may be easier than printing directly from Space. Reports that include graphic and text elements, such as the stacking layout and the summaries of spaces, their shapes and costs, take about 20 minutes per page on a laser printer! Evidently, they are sent bit-by-bit to the printer—all 256,000 pixels per EGA screen.

Purely tabular material printed well on a dot-matrix printer, but columns were distorted on a LaserJet II (because the default font is proportional). Users who run into this problem will have to send a "setup string" or escape sequence to the printer before entering Space, to prepare the printer to print with a nonproportional font (courier, for instance, on the LaserJet II).

Graphic Systems, Inc., is planning a new release this summer that will include dBase III and Lotus input and output, closer integration of core space use with the rest of the floor, and the ability to more easily consolidate spaces of the same kind across multiple floors.

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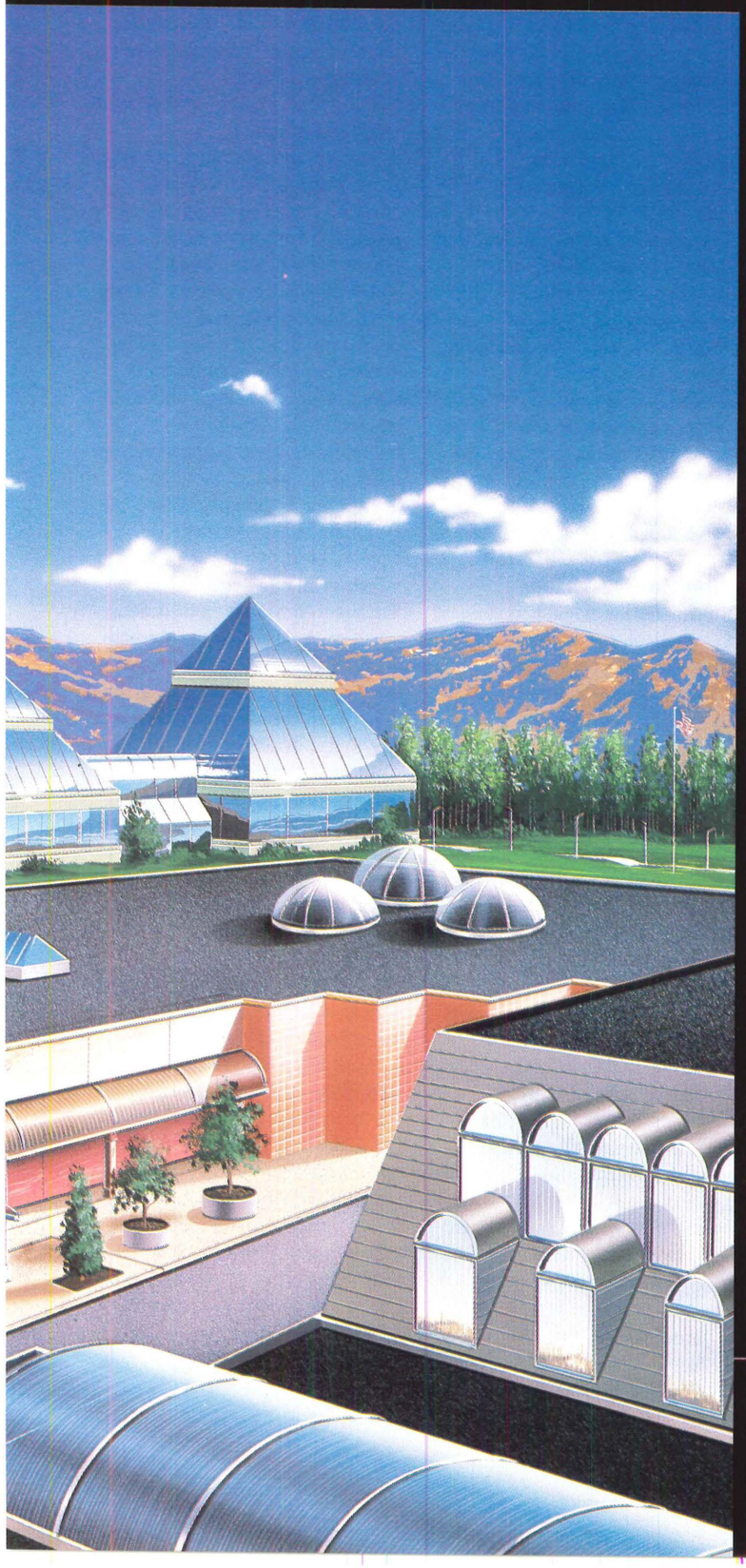
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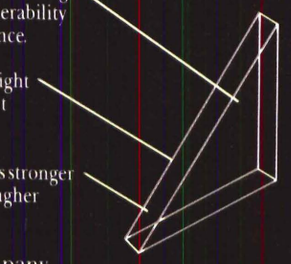
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For more information, circle item numbers on Reader Service Card

•Curtain walls
Published in conjunction with this manufacturer's 50th anniversary, a 475-page binder-format manual provides complete architectural design, engineering, and specification information on entrance systems, storefronts, curtain walls, hardware, and systems. Each product section has a color-coded tab, and comes with how-to-use instructions and color-application photography. Amarlite Architectural Products, Atlanta.
Circle 400 on reader service card

•Rubber/vinyl floor accessories
A full-line color catalog describes vinyl and rubber wall bases, stair treads, stair nosings, carpet and resilient moldings, and transitional edgings used with floor-covering installations. New products include a thinner, more flexible cove base offered in a range of colors to coordinate with flooring materials. Mercer Products Co., Inc., Newark, N. J.
Circle 401 on reader service card

•Traditional office furniture
A color catalog, fabric/leather sample supplement, and price lists are offered for Harden's extensive line of modular desk systems, wall units, seating, conference tables, and occasional furniture. Diagrams illustrate various office layouts using solid cherrywood components. Harden Furniture Contract Div., McConnellsville, N. Y.
Circle 402 on reader service card

•Hydronic space heating
A pocket-size manual lists the performance and flexible installation benefits of self-contained fan convector heating units, suggesting where and why they should be used in zoned residential heating systems. Output and dimensional data are provided for kick-space, fully recessed, and semirecessed heaters. Units operate on water temperatures of about 140 deg, making them suitable for solar installations. Myson Group, Inc., Falmouth, Va.
Circle 403 on reader service card

•Residential skylights
Leakproof and easy-to-install design features of Ventarama skylights are outlined in a 4-page color brochure. Insulating acrylic and glass units come in ventilating, motorized, and fixed configurations; curb, flashing, and dimensional details are illustrated. Ventarama Skylight Corp., Hicksville, N. Y.
Circle 404 on reader service card

•Carpet backing
Two "Market Update" brochures, part of a series prepared for the architect and facilities professional, contain end-use case studies and application photographs to demonstrate specific solutions to commercial and institutional flooring problems. Four types of *Enhancer* carpet backings are available for various carpet weights, substrate requirements, traffic patterns, and noise control. Dow Chemical USA, Dalton, Ga.
Circle 405 on reader service card

•Wood entrance doors
The *Grande Entrance Door System* is introduced in a 12-page color brochure, which explains how complete control of the manufacturing process ensures the long-term performance and appearance characteristics of the stile-and-rail door products. The frame system comes with rubber gaskets, weatherstripping, and an adustable door sweep, and is bored for both lock and deadbolt. Bend Millwork Systems, A Nortek Co., Bend, Ore.
Circle 406 on reader service card

•Museum lighting
A 14-page booklet contains color photographs of museums and exhibits where various LSI track systems and fixtures have lighted displays ranging from sculpture and decorative objects to locomotives and the Statue of Liberty. Architectural and lighting design credits are given for each project. Lighting Services Inc., Stony Point, N. Y.
Circle 407 on reader service card

•Designing with marble
Fold-out, poster-size quarterly newsletters from the Italian Marble Center illustrate innovative uses of natural stone by American architects, explain recommended stone restoration techniques, and introduce new manufacturing and installation technology. Italian Marble Center, New York City.
Circle 408 on reader service card

•Curved stairs
Each Scholler stair is individually designed to provide the most appealing effect possible within specific space and budget restrictions, according to a color brochure. A proprietary manufacturing process, with all parts pre-fitted at the factory, is said to substantially reduce the installed cost of a custom spiral or other curved staircase. Prairie Stair Products, Inc., Mtka, Minn.
Circle 409 on reader service card

•Wood stains and paints
An information packet explains the technical, product selection, and color design services available from this maker of oil and acrylic stains, wood preservatives, paints, and primers. Color photos show various products used on siding and decks. Olympic HomeCare Products Co., Bellevue, Wash.
Circle 410 on reader service card

•Fireplaces
A 16-page catalog illustrates all pre-engineered Superior fireplaces in room settings, including a three-sided fireplace with an open front, heat-circulating units, and the *Stoveplace* zero-clearance system that works as both a fireplace and a heat-stove. Superior Fireplace Co., Fullerton, Calif.
Circle 411 on reader service card

•Electronic tenant directory
The *Touchcom* color electronic directory, which uses a touch-sensitive screen to call and display up to 3,000 tenant names, locations, and building information, is described in a color brochure. Directories can be installed in freestanding kiosks, cabinets, or wall-mounted enclosures. A security function in the software-driven database allows personnel to identify individuals visiting offices after hours. Digital Techniques, Inc., Burlington, Mass.
Circle 412 on reader service card

•Skylight systems
A 16-page architectural catalog from Wasco's Commercial Division provides comprehensive product information on tubular-framed skylights, *Skydomes*, space enclosure systems, barrel vaults, and prefabricated low-profile skylight glazing. Color-application photography and dimensional drawings illustrate each system. A full-line technical-detail and specification manual is also available to design professionals. Wasco Products, Inc., Sanford, Me.
Circle 413 on reader service card

•Deck drainage system
Engineered to solve plaza deck and planter drainage problems without heavy stone aggregates, new *Miradrain 9000* is described in a 4-page brochure. A dimpled, polymeric drainage grid with a compressive strength of 18,000 psf, the prefabricated system has a woven filter fabric bonded to the top surface, and is said to handle high water-flow rates under a wide range of loading conditions. Mirafi, Inc., Charlotte, N. C.
Circle 414 on reader service card

•Lever-handle hardware
Traditional and contemporary-style door hardware compatible with Yale locksets is pictured in a 6-page color brochure. Handles from *Valli & Colombo*, *Forges*, and *Fusital* are shown in polished brass, chrome, and colors ranging from adobe to maroon. Yale Security Inc., Charlotte, N. C.
Circle 415 on reader service card



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Yes, we're shouting . . . and you'd shout too if you had the greatest range of granite and gemstone colors in the entire solid surface industry!

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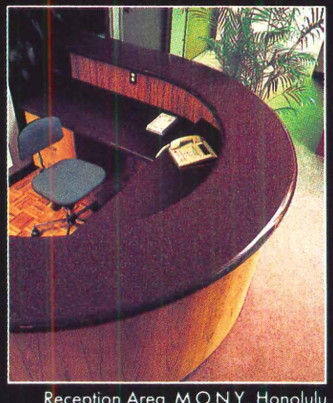
ALTHOUGH AVONITE LOOKS LIKE STONE, IT CUTS LIKE WOOD! It is routed, shaped, drilled and sanded with regular woodworking tools! A unique fusion adhesive creates imperceptible seams. Because the grain goes all the way through, cigarette burns are removed in minutes with light sanding. Accidental nicks are quickly and invisibly repaired with a putty-like patch kit that comes in every Avonite color.

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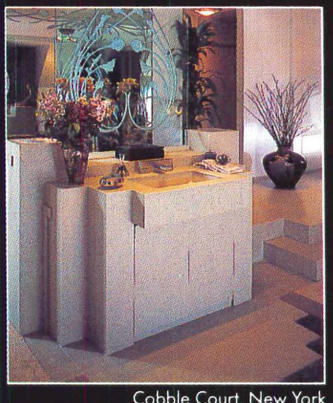
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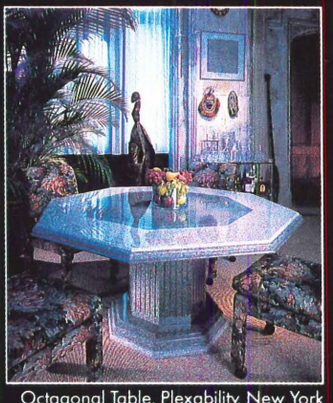
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Reception Area, M.O.N.Y., Honolulu
Designed by Kraft Kitchens, Honolulu



Cobble Court, New York
Designed by Michael Love, ASID



Octagonal Table, Plexability, New York
Designed by Berkowicz/Haller



Marotta Residence, New Je
Designed by We-Add, New J

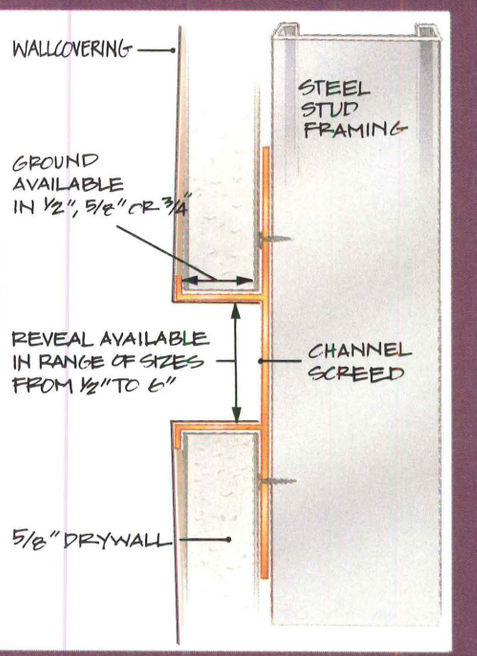
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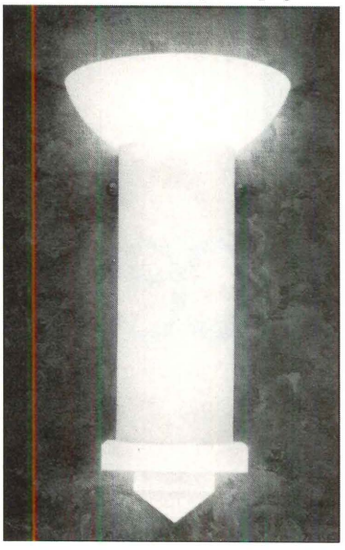
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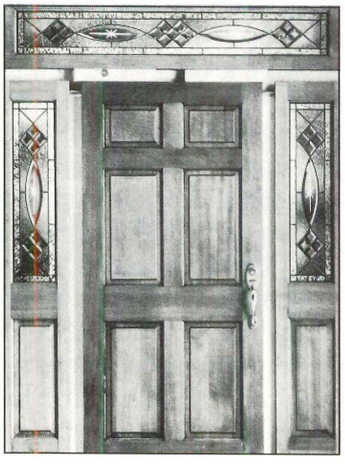
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Circle 82 on inquiry card

Products continued from page 152



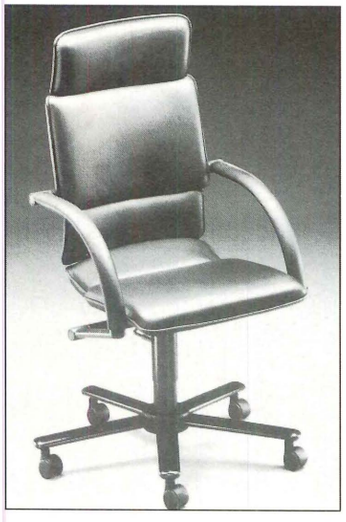
Sconce
Jerry Van Deelen's *Torch* is a column of translucent *Corian* lit from within to create a look of glowing alabaster. The half-round top is frosted acrylic; the base is green *Prismacolour* acrylic. Fixture is 23 in. high, but only 6 in. deep. Les Prismatiques, New York City.
Circle 311 on reader service card



Glazed entrance
Insulated, triple-glazed transoms are now offered with many *Mastermark* residential entrances (*Colonial Manor* is pictured). Designed by Walter Dorwin Teague Associates, beveled and leaded-glass transoms and matching sidelights may be ordered for single- or double-door installation. Simpson Door Co., McCleary, Wash.
Circle 312 on reader service card



Shower tower
An adjustable hand shower has been added to the *Coriandoli Series* Italian-made bath fittings. Chrome shower rods come either 24 or 40 in. long; shower heads come in black, white, red, or yellow. Matching soap dish and basket also slide up or down on the wall-mounted rod. Watercolors, Garrison-on-Hudson, N. Y.
Circle 313 on reader service card



Responsive seating
C6, a new high-back version of Martin Stoll and Arno Votteler's *C Collection* office seating, has active pelvic support, a patented two-part back construction said to ensure comfortable, supported posture for the user in any seated position. Finish options include black or platinum-gray frame, and wool, polyester, or leather upholstery. Harter Corp., Sturgis, Mich.
Circle 314 on reader service card
Continued on page 188

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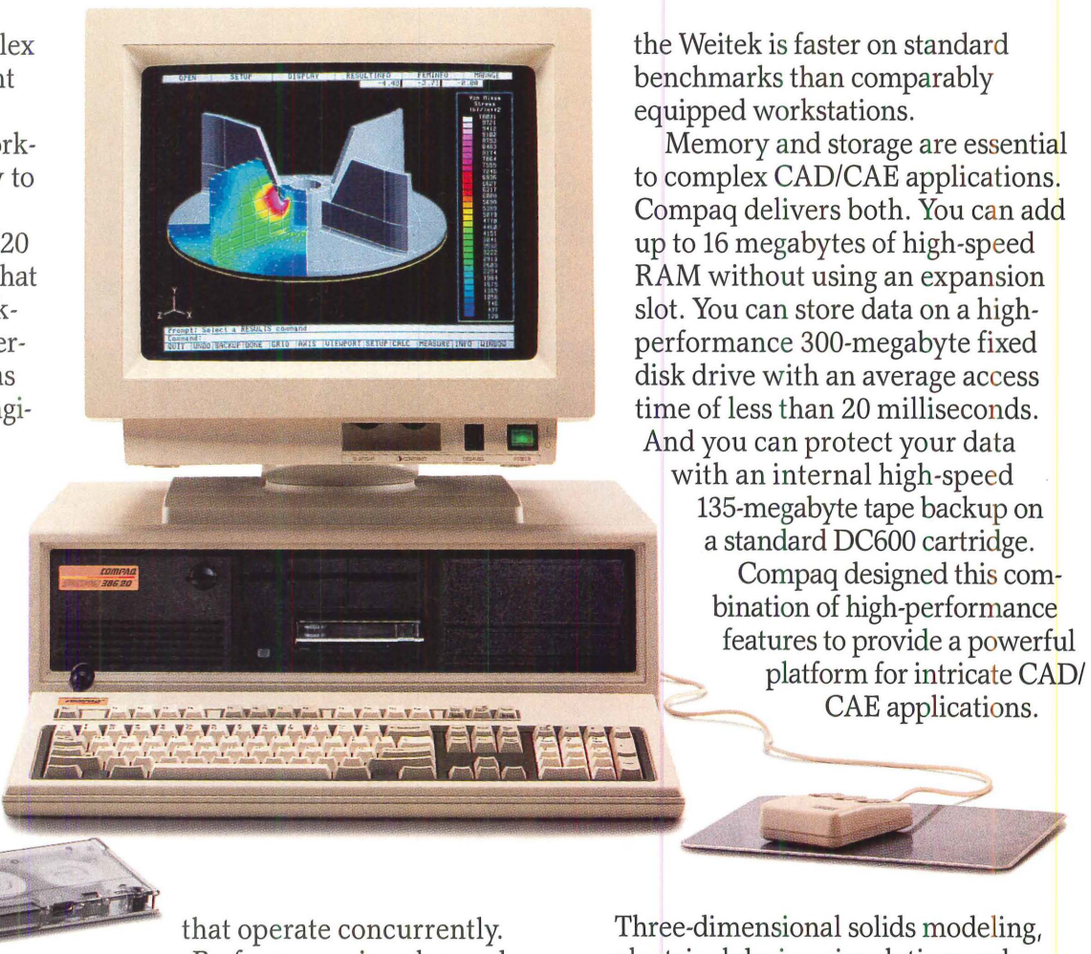
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You demand power to run complex CAD/CAE applications. You want compatibility to support highly specialized peripheral and networking products. You need flexibility to run productivity software.

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A 32-bit performance platform for CAD/CAE

We gave the COMPAQ DESKPRO 386/20 its workstation-level performance by surrounding a powerful 20-MHz Intel® 80386 microprocessor with COMPAQ Flexible Advanced Systems Architecture. This innovative 32-bit architecture optimizes overall system performance while maintaining compatibility with industry-standard hardware and software. Compaq accomplished this by combining an advanced memory caching scheme with memory and peripheral buses that operate concurrently.

Performance is enhanced further with the high-speed Intel 80387 Math Coprocessor and Weitek™ Coprocessor options. Both increase the speed of floating-point-intensive applications. In fact, the COMPAQ DESKPRO 386/20 with the Weitek is faster on standard benchmarks than comparably equipped workstations.

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with the flexibility and cost of a PC.

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Performance Comparisons

Performance Benchmark	COMPAQ DESKPRO 386/20*	IBM PS/2™ Model 80-111†	SUN® 3/260*	APOLLO® DN 4000*
Dhrystones/sec.	7800	5514	7142	6250
MWhetstones/sec.	4.6	1.8	3.4	3.8
Linpack (KFLOPS)	900	630	865	800

*Using Weitek Coprocessor †Using 80387 Coprocessor

The COMPAQ DESKPRO 386/20 is faster on standard performance benchmarks than comparable workstations.

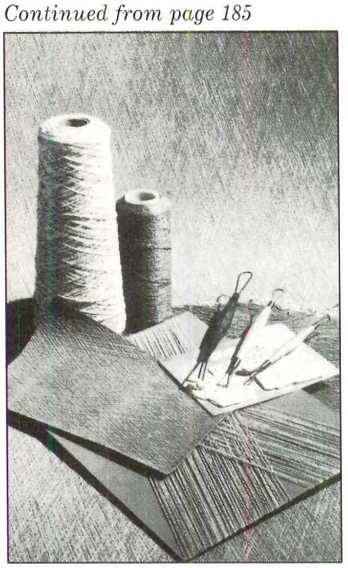
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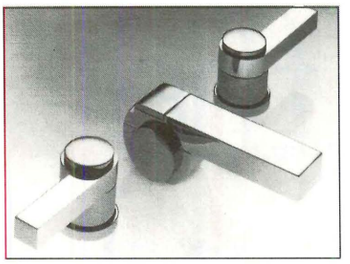
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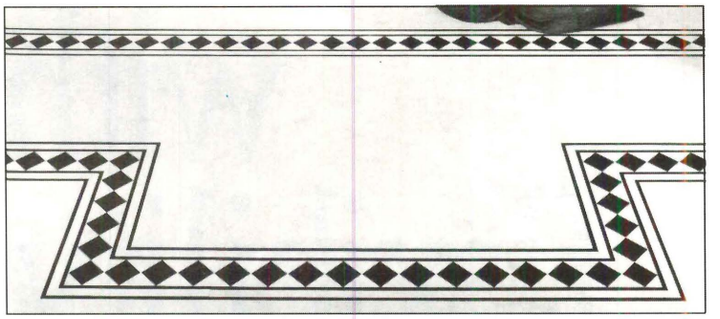
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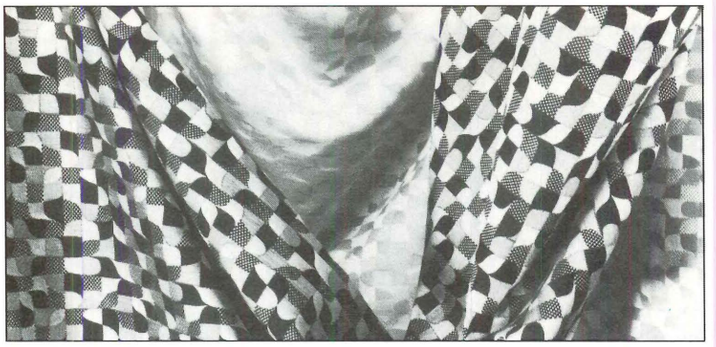
Textured vinyl wallcovering
Diamond Weave, a Class A contract pattern based on wound yarn in a strand-over-strand configuration, now comes in 40 colors, designed to coordinate with office-system fabrics, carpeting, and surfacing materials from major manufacturers. Genon Wallcoverings, Hackensack, N. J.
Circle 315 on reader service card



Faucet set
The *Houston* lavatory set has rectangular lever handles and spout, finished in any combination of polished or satin brass, chrome, or gold. The drain lift-knob lies flat within the spout. Paul Associates, Long Island City, N. Y.
Circle 316 on reader service card



Vinyl tile flooring
Century Marble is one of several new commercial flooring products offered with a 10-year wear warranty. The marble-pattern vinyl comes in 12- by 12-in. squares and 12- by 18-in. rectangles, in white, beige, black, and malachite. Coordinating inlaid borders have contrasting black-and-white marble-pattern diamonds and stripes (pictured), or stripes alone, furnished as 9- by 36-in. pieces. Azrock Floor Products, San Antonio, Texas.
Circle 317 on reader service card



Geometric fabric
A distinctly printed all-cotton upholstery, *Vienna Weave* comes in black and light beige, and a tone-on-tone combination in beige neutrals. Lee Jofa, Carlstadt, N. J.
Circle 318 on reader service card

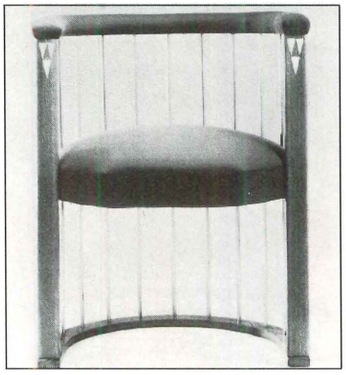




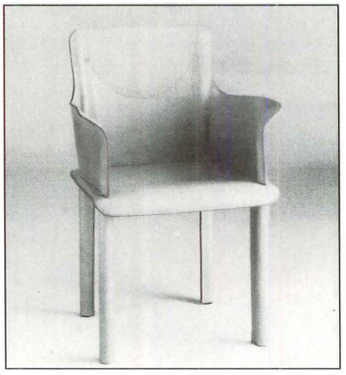
Transitional design
Each *Signature Series* desk and credenza is said to be handmade, crafted from selected hardwoods and veneers, and detailed to enhance the natural wood grain. Lunstead, Inc., Kent, Wash.
Circle 319 on reader service card



Ceramic bath
The new *Toboga* ceramic line includes glazed nonvitreous 8-in.-sq tiles offered in a series of gray hues, and sleek-looking plumbing fixtures in ebony (pictured) or matte white, as well as 12 other colors. Accessories such as towel bars, mirror, and shelves coordinate with *Toboga* ceramics. Villeroy & Boch (USA), Inc., Pine Brook, N. J.
Circle 321 on reader service card



Saarinen armchair
A 1908 design by Eliel Saarinen for the Black Villa in Vihti, Finland, is available in an authorized reproduction from ICF. Chair frame is solid oak with birch insets, with brass tubing supporting the upholstered back. ICF, Inc., New York City.
Circle 320 on reader service card



Armchair
Constructed with leather back and arms saddle-stitched onto a welded steel structure, Roberto Giussano's *Roma* chair has the comfort of an upholstered piece. Tubular legs may also be leather covered, or lacquered in black, red, or white. Monel Contract Furniture, Inc., Oakland Gardens, N. Y.
Circle 322 on reader service card
Continued on page 191



Circle 84 on inquiry card



The effects of water penetration can humble any modern-day castle. Now, new DRI-SIL™ water repellents from Dow Corning can protect concrete and other porous substrates from potential damage.

Without darkening or altering the appearance of masonry, DRI-SIL silanes protect buildings, parking decks, and stadiums from moisture-related problems such as corrosion of reinforcing bars, salt leaching, and freeze/thaw cracks.

While other water repellents stay mainly on the surface, the unusually small molecular structure of DRI-SIL silanes allows them to penetrate up to a half inch, depending on the porosity of the substrate.

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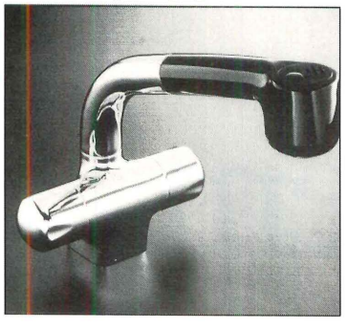
So don't let the weather wash away your castles. Protect them from crumbling with DRI-SIL water repellents. For specification information on DRI-SIL silanes or other weatherproofing products from Dow Corning call 1-800-346-9882, ext 2222. Or write Dow Corning Corporation, Department 8000, Midland, MI 48686-0994.

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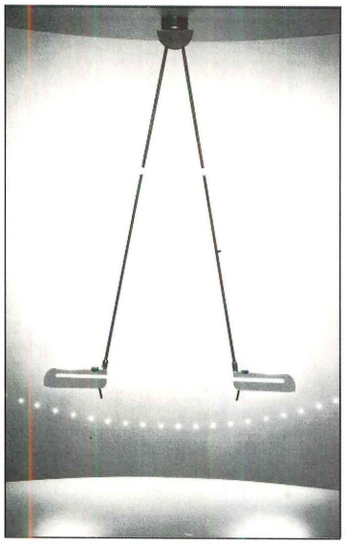
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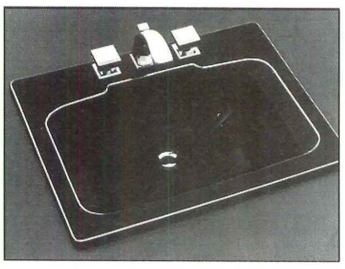
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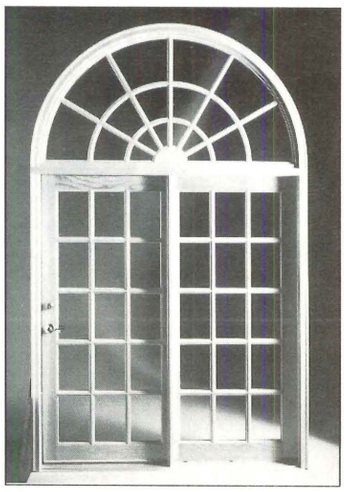
Kitchen faucet
The *Convenient Epicure* is a new two-handle version of the single-handle *Epicure* faucet. The spout pulls out for use as a spray or pot-filler. An 8-in. escutcheon can be supplied for mounting on a 3-hole sink. Kohler Co., Kohler, Wis.
Circle 323 on reader service card



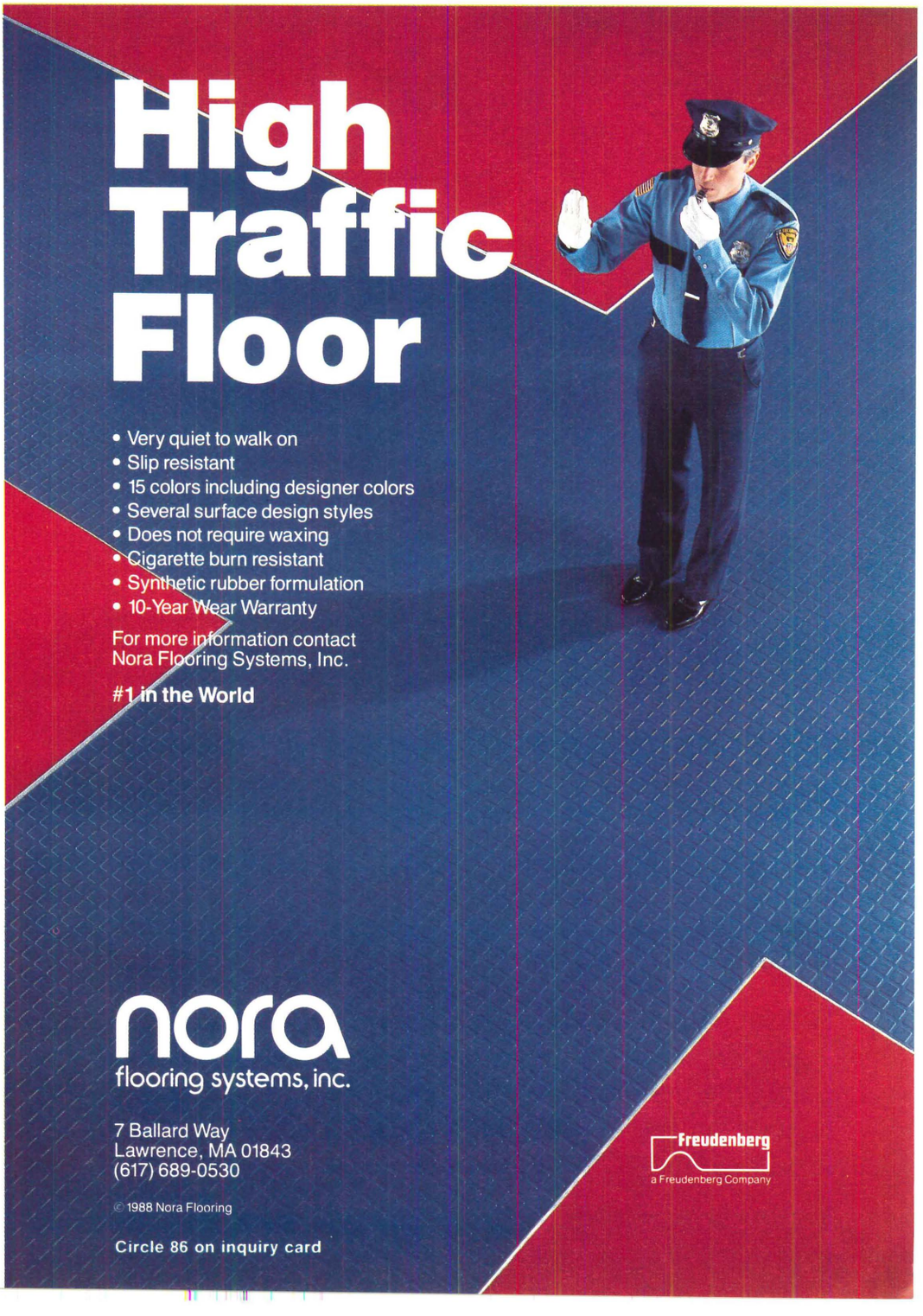
Pendant fixture
Designed to light tables of a variety of sizes and shapes, the *Compasso* fixture has halogen-lit arms that can be separated 33 in., and rotated in a full circle from its hemispherical ceiling mount. By Luciano Balestrini and Paola Longhi for *Luceplan*, *Compasso* has diffusers of white, green, or red Murano glass, and is available in two lengths: 52 and 65 in. Artemide, Long Island City, N. Y.
Circle 324 on reader service card



Lavatory
China basins from Kallista come in three self-rimming shapes: rectangular (shown), octagonal, and oval. Gold or platinum trim lines may be ordered to match the faucet finish. Kallista, Inc., San Francisco.
Circle 325 on reader service card



Divided-light doors
The *Georgetown Collection* of western-pine windows, sliding and hinged patio doors, and round-top units features true divided-light glazing. Muntins are 1 3/8 in. thick for insulated glass, and 7/8 in. thick when single-pane glass is specified. Units are furnished ready for painting or staining on site. Caradco, Rantoul, Ill.
Circle 326 on reader service card
Continued on page 193



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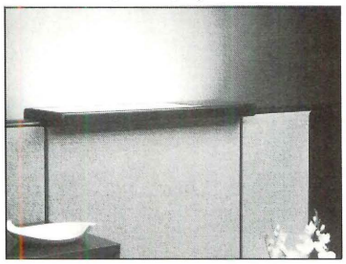
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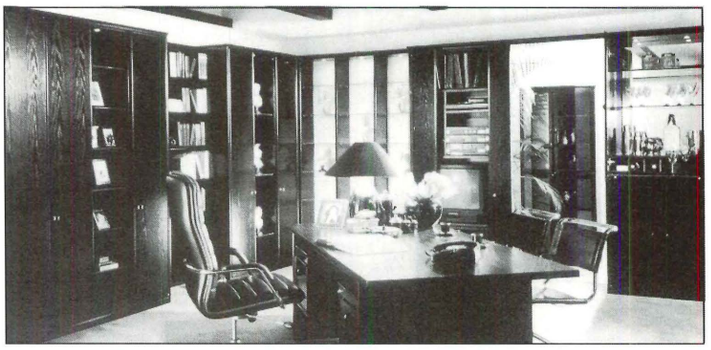
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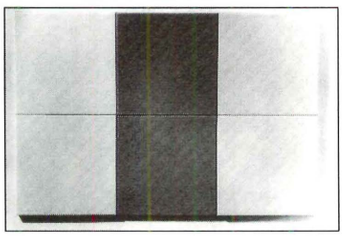
Office lighting
Part of an integrated lighting program for open-office installations, the *Ambient* fixture is said to provide smooth, uniform light throughout a work area, supplying glare-free illumination for VDT screens. The fluorescent luminaire can be mounted on top of office partitions, as shown; concealed switches allow the user to adjust light intensity. Shaw-Walker, Muskegon, Mich.
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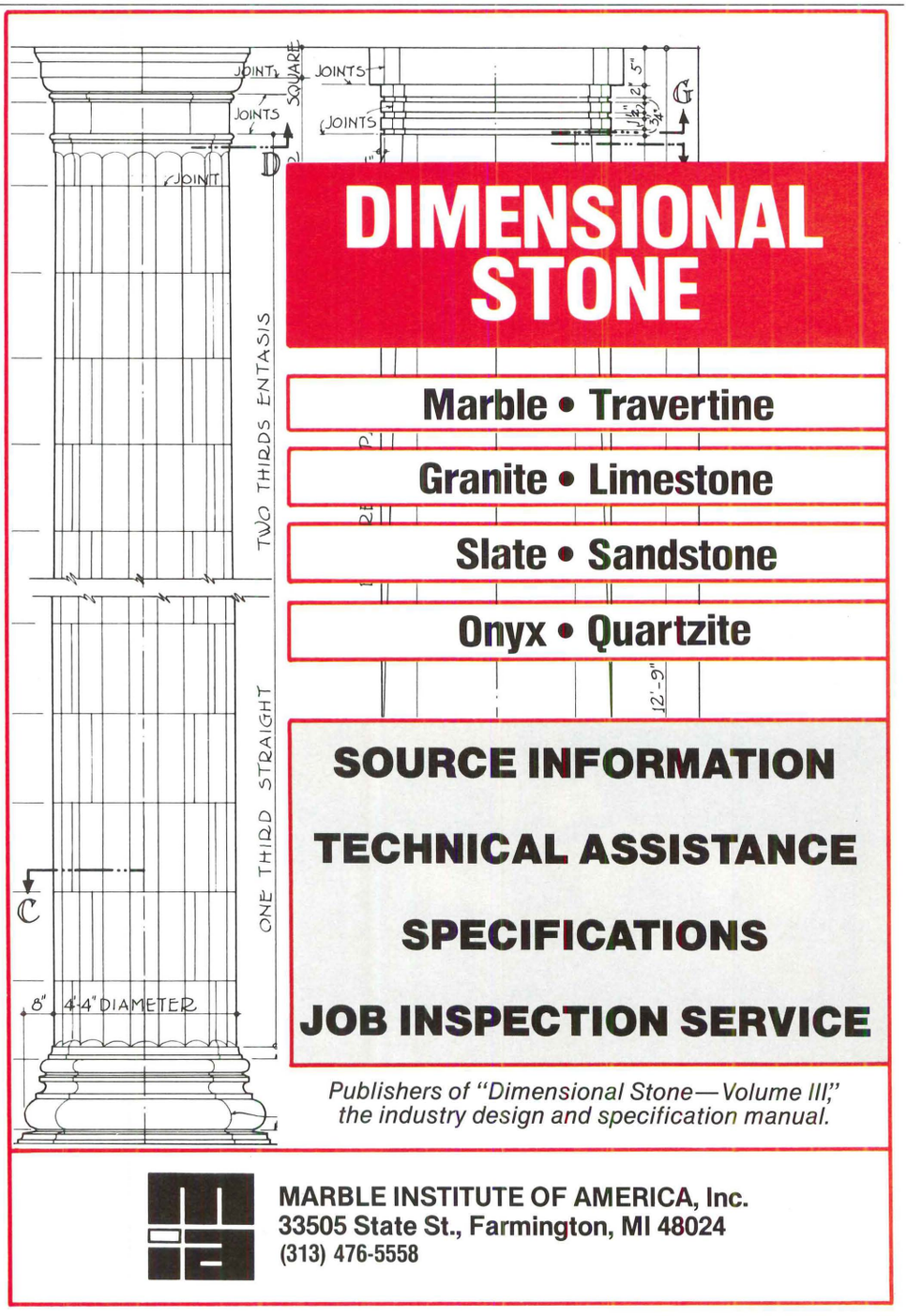
Jacquard upholstery
A stylized pattern of oak leaves and acorns based on Second Empire French documents, *Alicia Woven Texture* is a heavy, all-cotton reversible jacquard available in peach, aqua, and terra-cotta colorways. Brunschwig & Fils, North White Plains, N. Y.
Circle 328 on reader service card



Executive casework
Shown in black oak with mirrored bar, glass shelf units, and matching pedestal desk, full-height *Alpha Series* cabinets are part of a Custom Office line of wraparound storage components for the executive or home office. Office system is available in 12 styles and 13 wood finishes. Planum, New York City.
Circle 329 on reader service card



Tiled to match
Diagonale floor tile has grit-bearing stripes and a 3+ PEI rating; it is offered in almond, gray, and taupe to match kitchen appliances. House of Ceramics, Inc., Port Chester, N. Y.
Circle 330 on reader service card
Continued on page 195

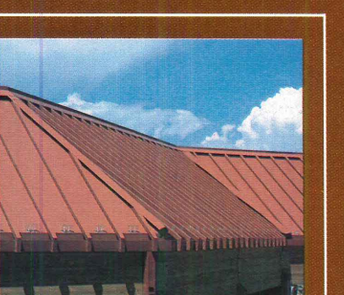


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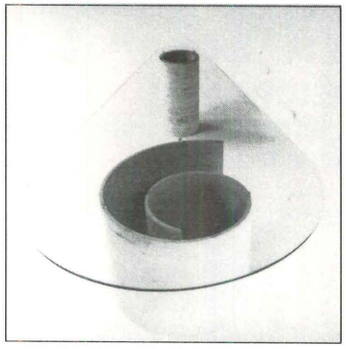
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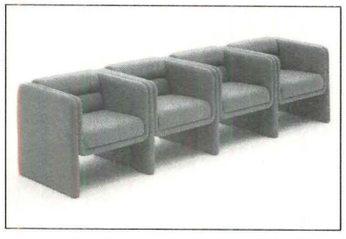
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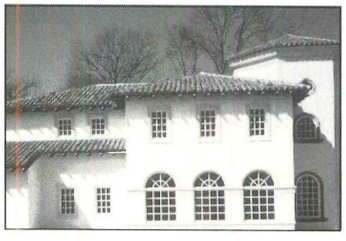
Continued from page 193



Spiral stone
The natural marble and granite used in *Vega* furniture can be laser-cut into extremely thin shapes, such as the extended spiral of this dining-table base. Casaform, New York City.
Circle 331 on reader service card



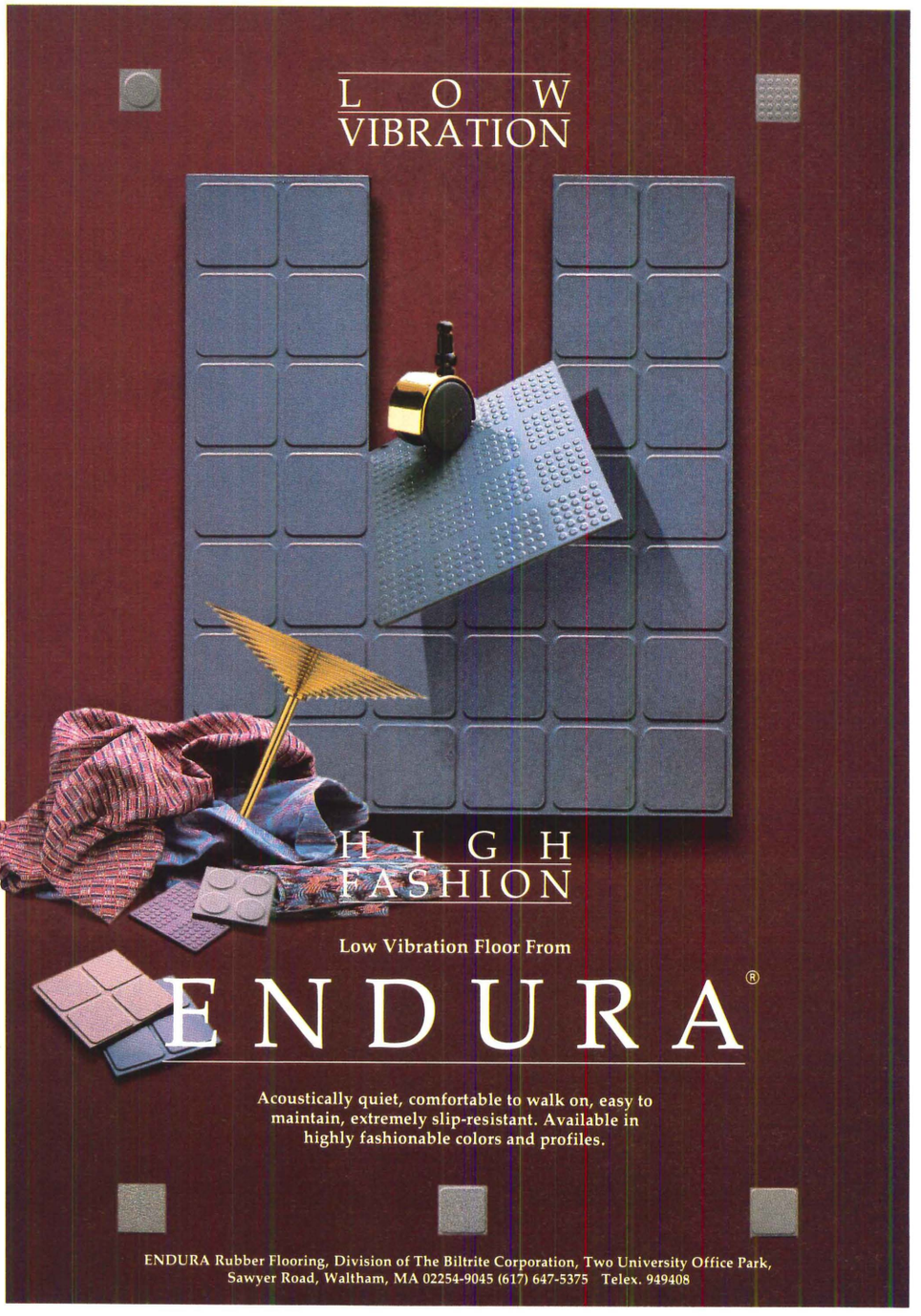
Lobby seating
Rugged enough for use in airport waiting areas, *Cascade* upholstered seating is compactly scaled; the four-seater pictured is 112 in. long. AGI Industries, Inc., High Point, N. C.
Circle 332 on reader service card



Exterior finish system
A mechanically attached exterior insulation and finish system, *Ultralation* is said to provide superior impact resistance in a wide range of textures and colors. Corrosion-resistant screws secure fiberglass reinforcing mesh and insulation boards to any sound substrate, including wood or metal framing with sheathing, masonry, or poured concrete. A textured, all-acrylic base coat is then covered with any Dryvit exterior finish, such as the *Demandit* coating pictured. Dryvit Systems, Inc., West Warwick, R. I.
Circle 333 on reader service card



Sliding door
An addition to Andersen's patio line, the wood-framed *Frenchwood* door has an interior finish of one-piece, natural pine veneer; the exterior comes in white or *Terratone* urethane finish. The door may be ordered with a snap-in, traditional-style grille of solid maple that can be stained or painted. The meeting stiles interlock to create a continuous weatherstrip, "zipping" the door shut. Andersen Corp., Bayport, Minn.
Circle 334 on reader service card

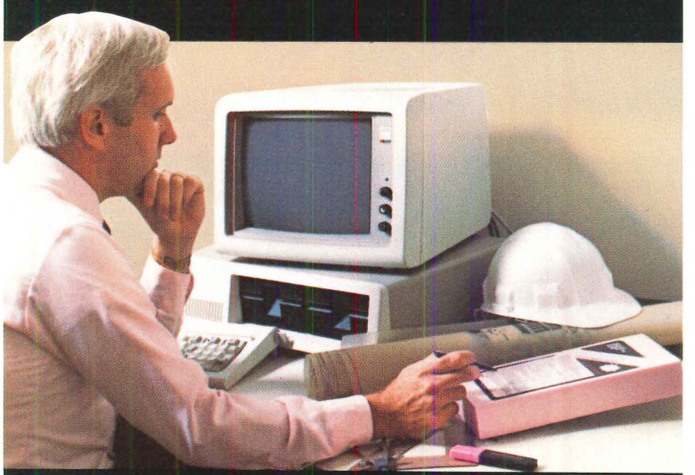


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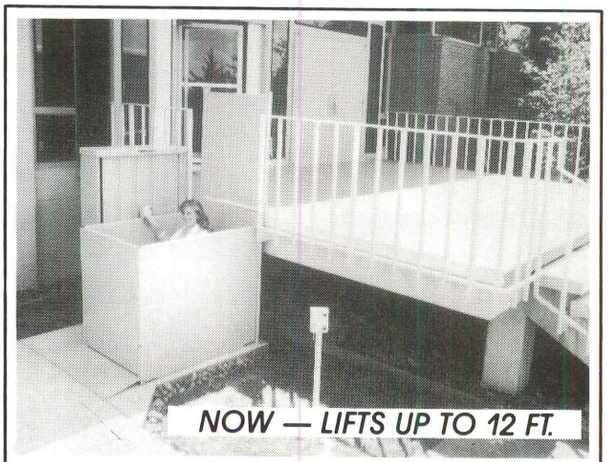
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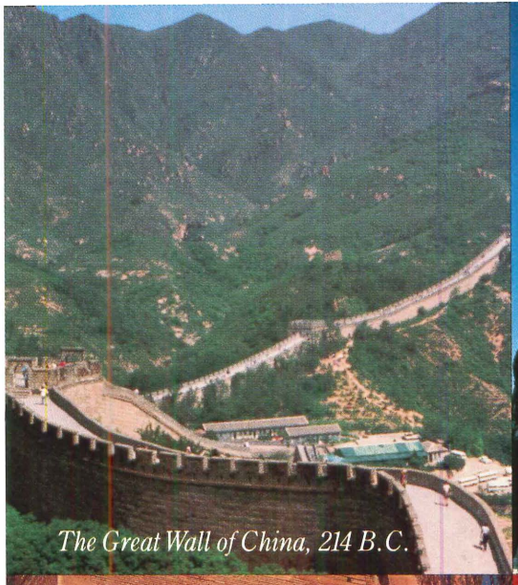
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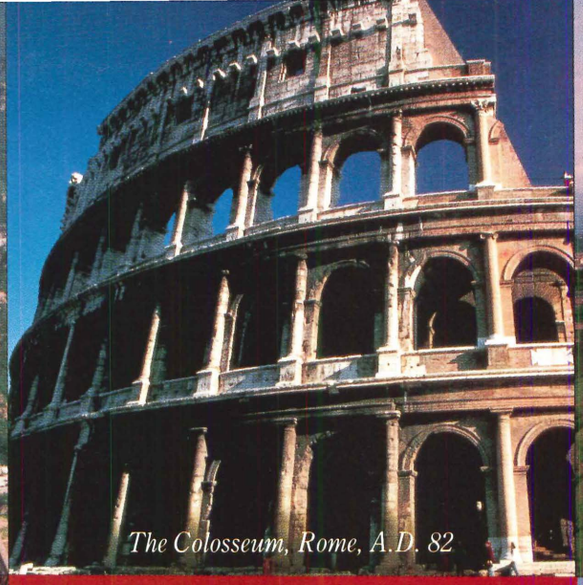
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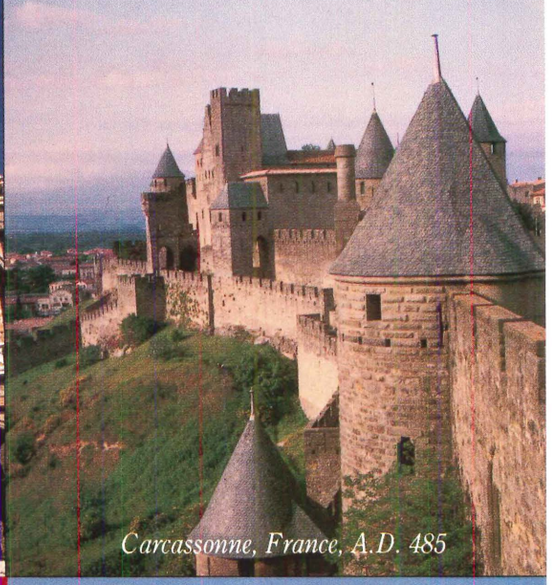
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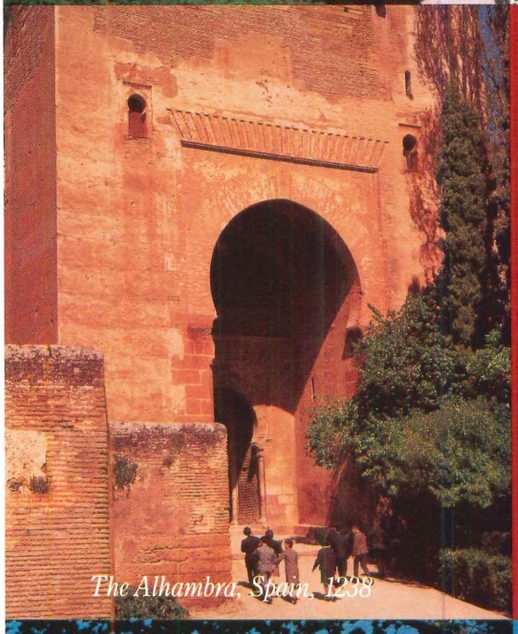
The Great Wall of China, 214 B.C.



The Colosseum, Rome, A.D. 82

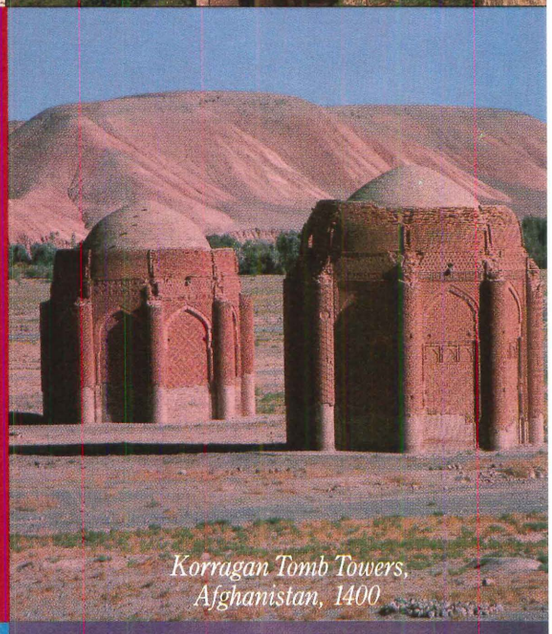


Carcassonne, France, A.D. 485

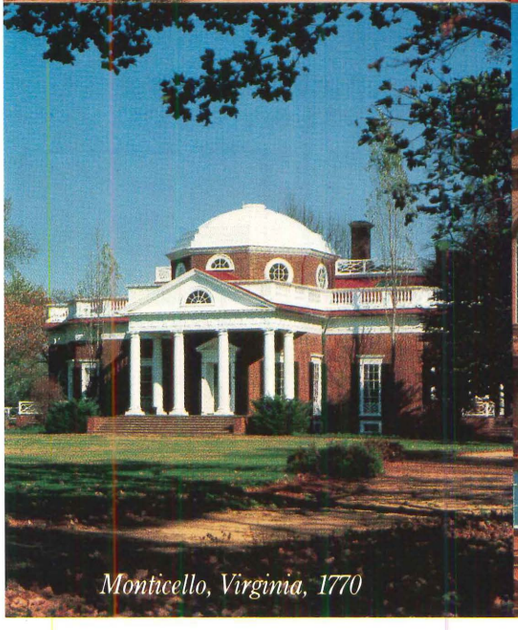


The Alhambra, Spain, 1238

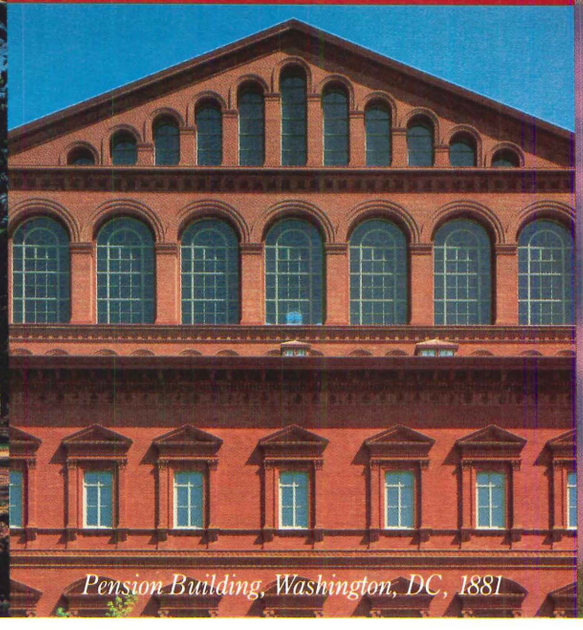
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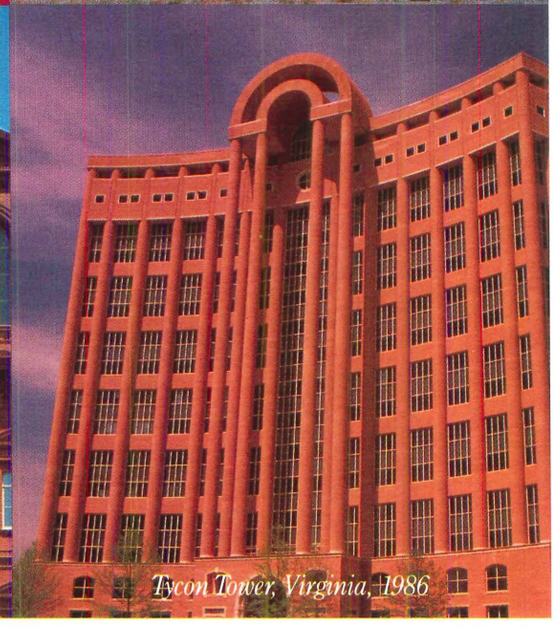
Korragan Tomb Towers, Afghanistan, 1400



Monticello, Virginia, 1770



Pension Building, Washington, DC, 1881



Tycon Tower, Virginia, 1986

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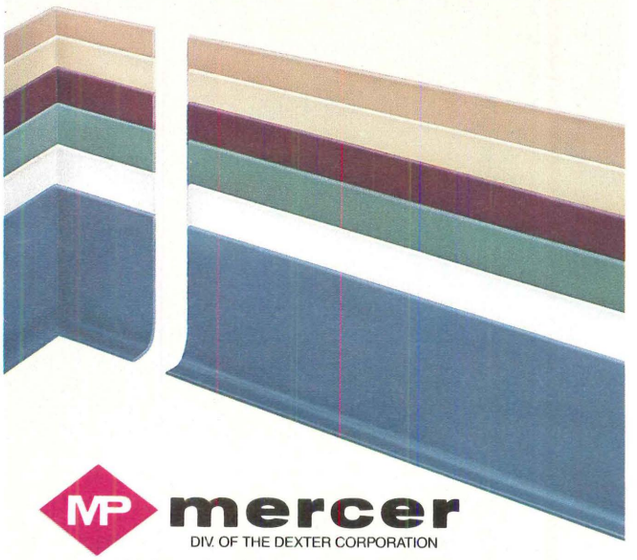
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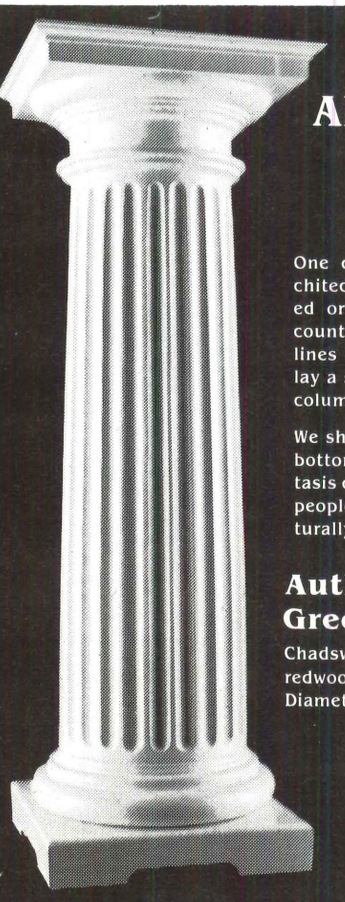


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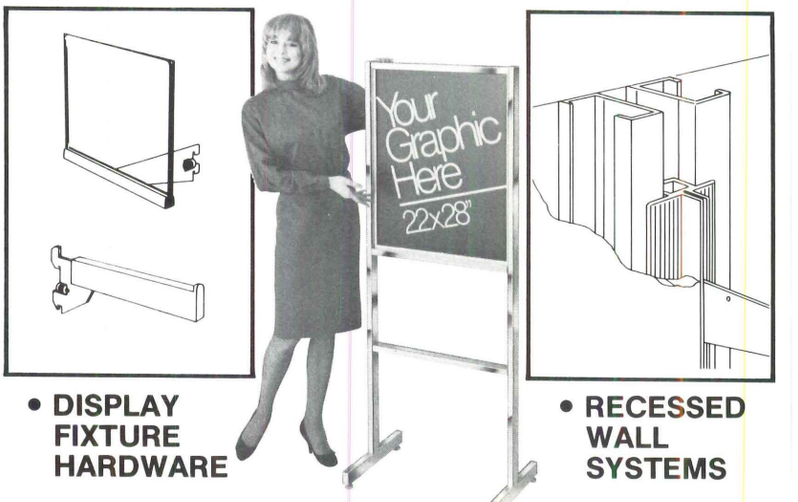
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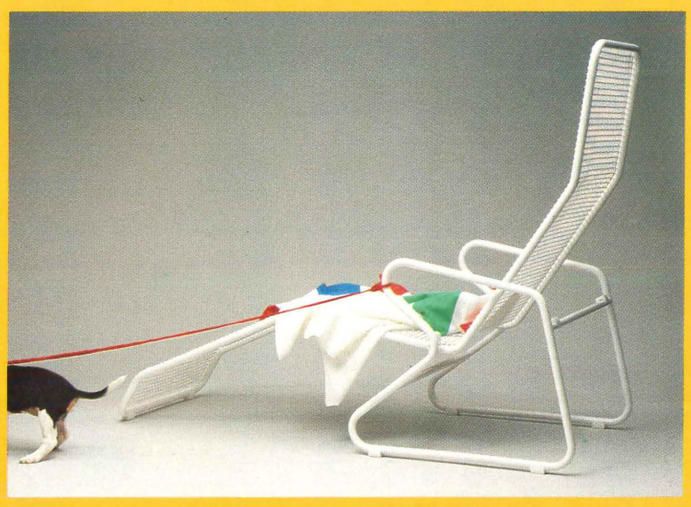
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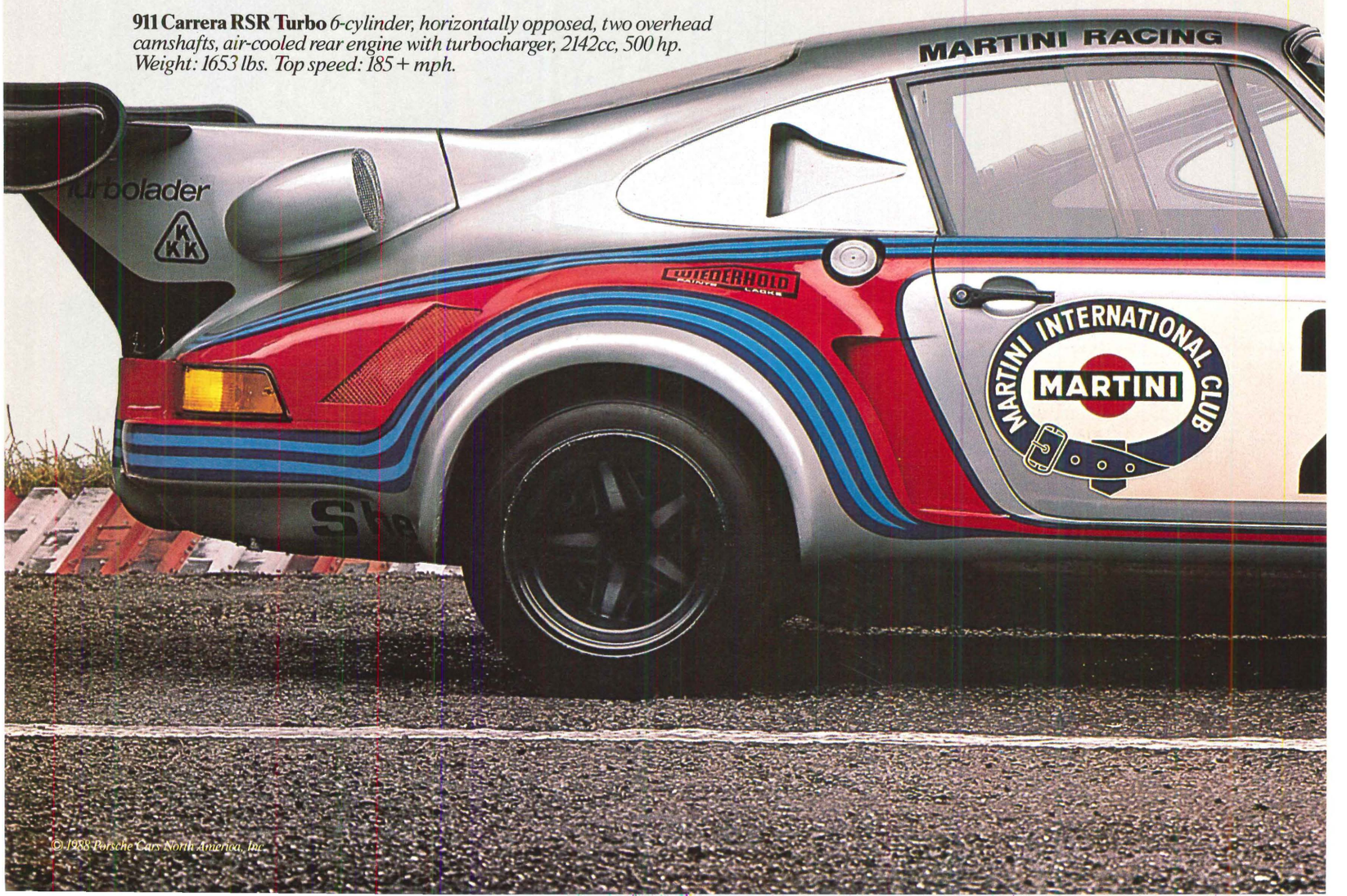
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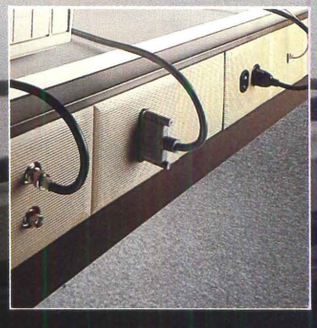
For your convenience in locating building materials and other products shown in this month's feature articles, RECORD *has asked the architects to identify the products specified*

Pages 114-121
GTU Library
Esherick Homsey Dodge & Davis and Peters Clayberg & Caulfield, Architects
Pages 115, 118-119—Clear wood finish: Flood Co. *(Aquatrol).* Integrally colored cement: Tecon Pacific. Terra-cotta tile: Catalan Pavers. Windows: Coast to Coast Mfg. Skylight: O'Keeffe's Inc. Doors: Stiles Metal. Roofing: Manville.
Page 120—Ceiling grid: Sono-Ceil. Downlights: Kirlin. Stack lighting: Peerless. Sprinklers: Reliable. Tile: Gail Ceramics. Carpeting: Fabrica, Inc.
Page 121—(top) Lounge chairs: David Edward. Fire-retardant on paneling: Flamort. Display cases: custom by architects, fabricated by Shen Yamaguchi. Corner-mounted wall lights: Rambusch. Spot lights: Prescolite. (bottom) Table: Johnson Industries, Inc. Chairs: Gunlocke.

Pages 122-129
North Dade Justice Center
Arquitectonica, Architects
Pages 122-126—Aluminum-framed curtain wall and entrance: Window Master. Reflective glazing: PPG Industries. Elastomeric roofing: W. R. Grace & Co. Insulation: Owens-Corning. Skylights: Astrolite. Doors: Allied Steel.
Pages 128-129—Closers: LCN. Electric strikes: Folger Adams; Detex; Adams Rite. Exit devices: Von Duprin. Paints: Glidden. Ceiling: Armstrong (*Cirrus*). Suspension grid: Donn Corp. Wood doors: Weyerhaeuser Co. Locksets: Schlage Lock Co. Seating: JG Furniture.

Pages 142-149
The Grande Louvre
I. M. Pei & Partners, Architects
Laminated glazing: St. Gobain. Plastic interlayer: Monsanto Co. (*Saflex*). Structural-glazing sealant: Rhone-Poulenc, Inc. Concrete formwork: Weyerhaeuser Co. Truss fittings: NAVTEC.

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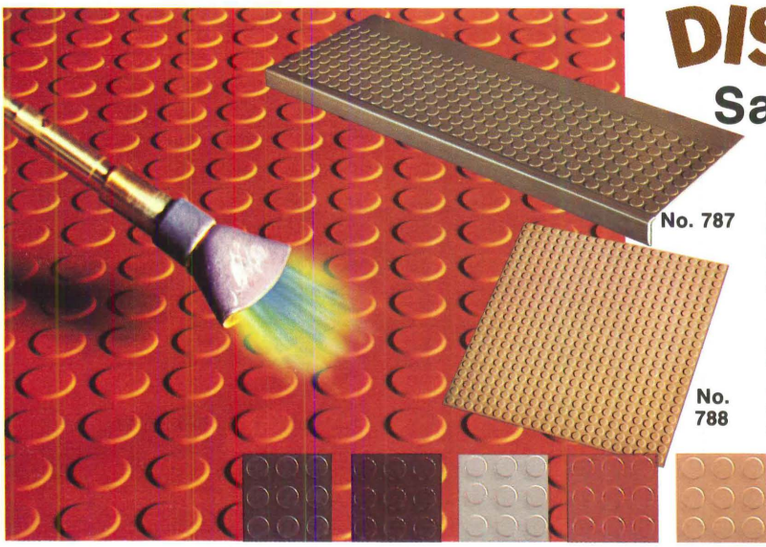
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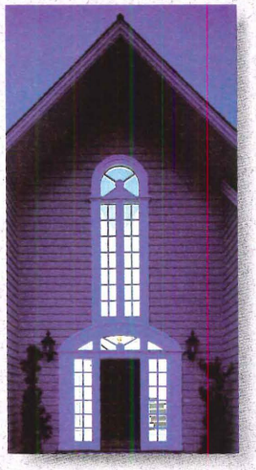
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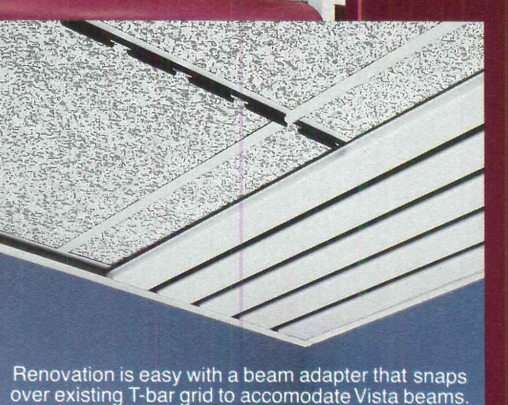
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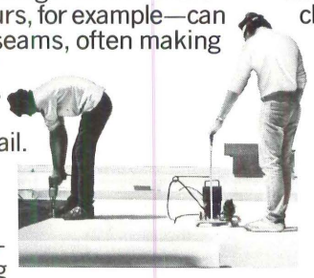
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Since curing cannot be prevented, detected or controlled, seaming CSPE frequently leaves contractors no choice but to perform extra functions such as double applications of solvents and primers prior to heat-welding, thereby doubling—sometimes tripling—seaming costs. Unfortunately, the extra effort still can't guarantee the watertight integrity of the seam.

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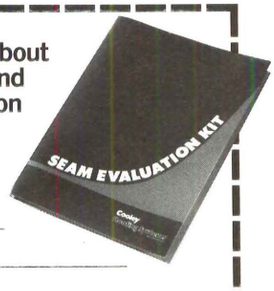
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How an innovative h didn't change history.



eat pump application

The Akron Art Museum was built in 1904 in the French Renaissance style, and was a civic landmark for decades. But by the 1980's, its splendor had faded. Three rounds of alterations had reduced the once-proud Beaux Arts building to a run-down shell.

Electricity saves buildings.

Fortunately, the art museum's classic elegance was recognized by Roetzel and Andress, a law firm in search of new offices. Together with a skilled design team, they made a commitment to preserve the original architecture of the building, inside and out. That meant finding a heating system that was simple, unobtrusive, and efficient.

Electricity saves money.

The design team worked closely with Ohio Edison representative, Joseph Pfeiffer, who suggested a closed-loop, water-source, heat-pump system.

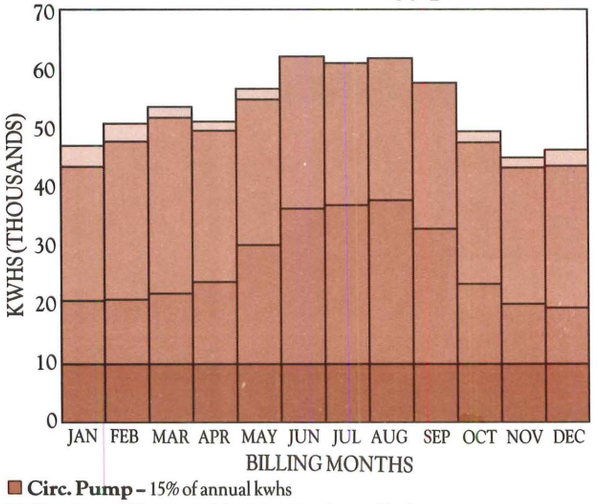
The heat pump would allow complete control, save space, lower construction costs, and operate more efficiently than a separated heating and cooling configuration.

Although the original concept called for a gas boiler to maintain water loop temperature, the final design was changed to utilize electricity. By using an electric boiler, the engineers were able to reduce first costs, and eliminate flues and makeup air. The electric solution also was cleaner, quieter, and would more than offset a marginal operating cost edge with the gas equipment.

Electricity saves energy.

For maximum efficiency, the engineers included a heat-pipe recovery system to reclaim heat from exhaust air, and an energy management system to optimize operation of the new HVAC system.

Both considerations paid off. Roetzel and Andress occupied the building in late 1983 and were impressed with the energy performance.



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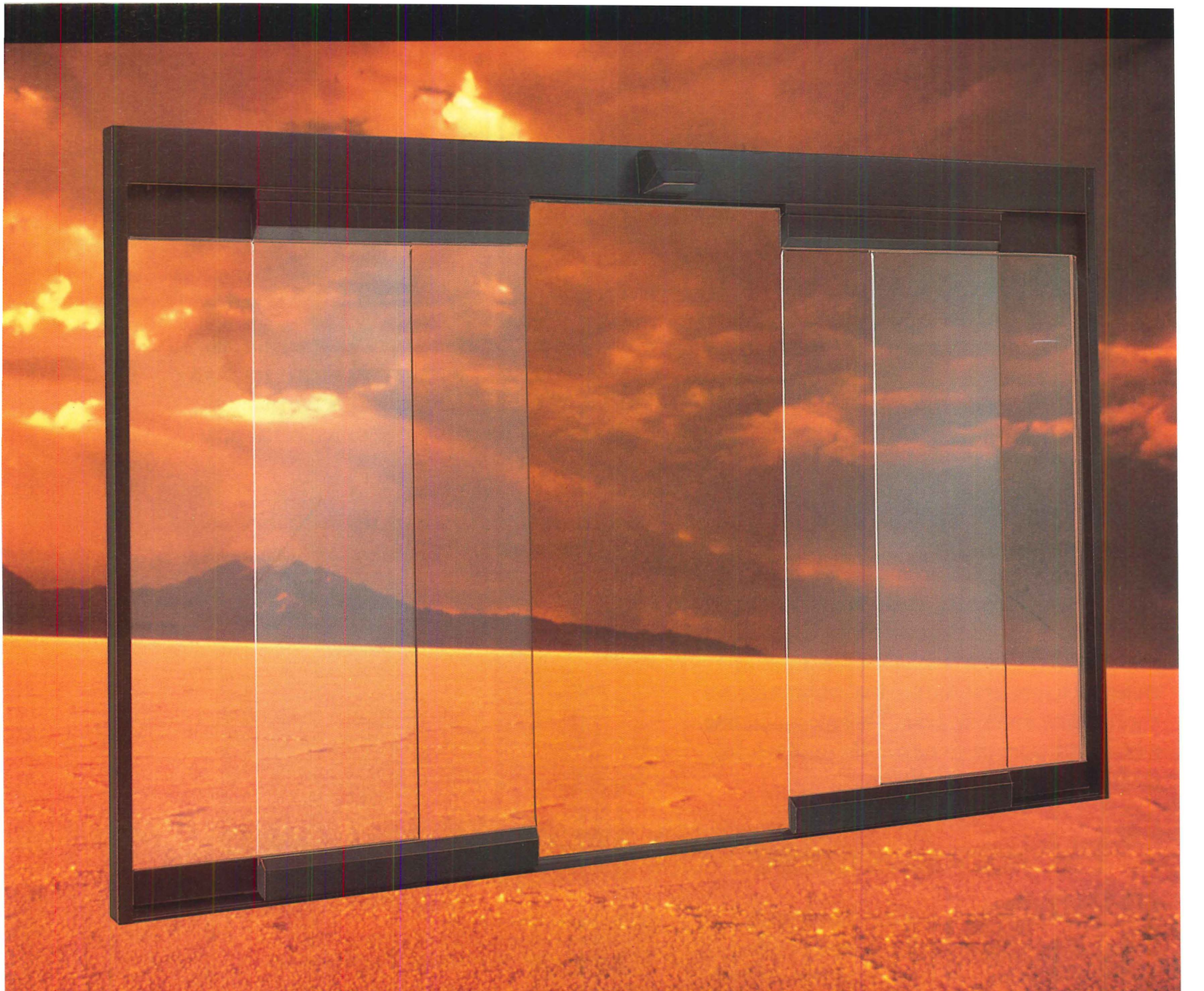
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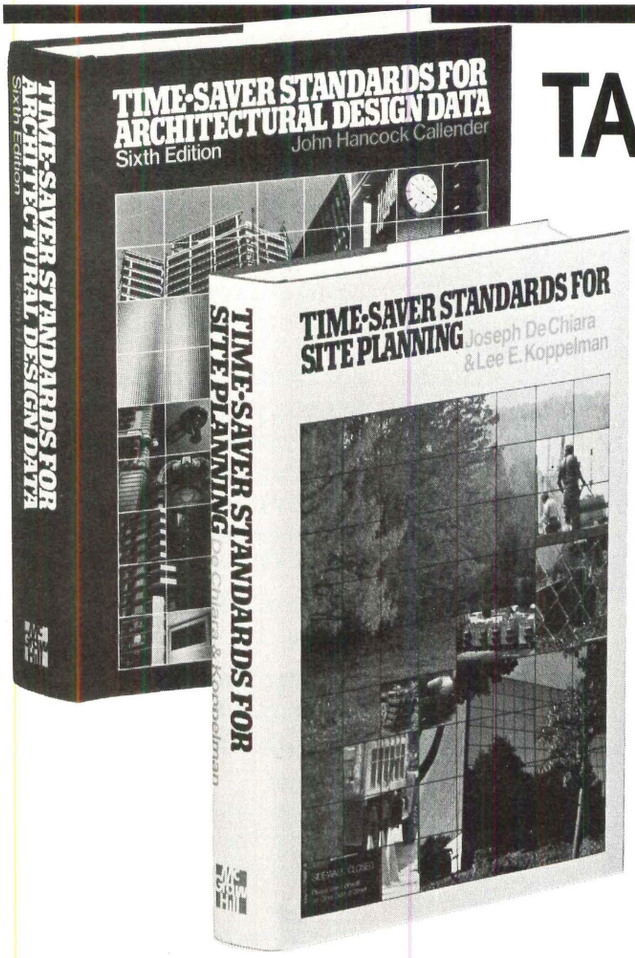
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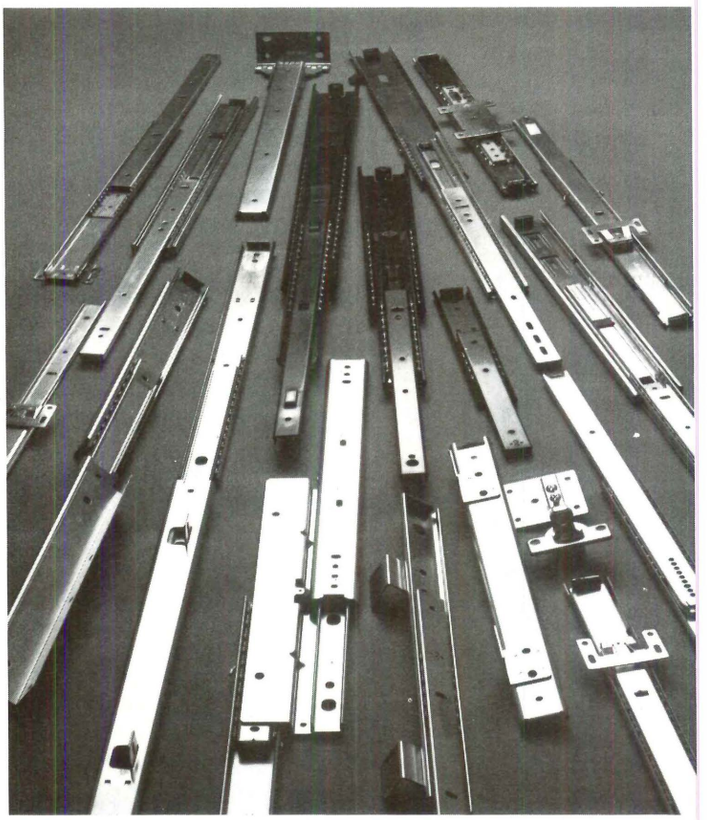
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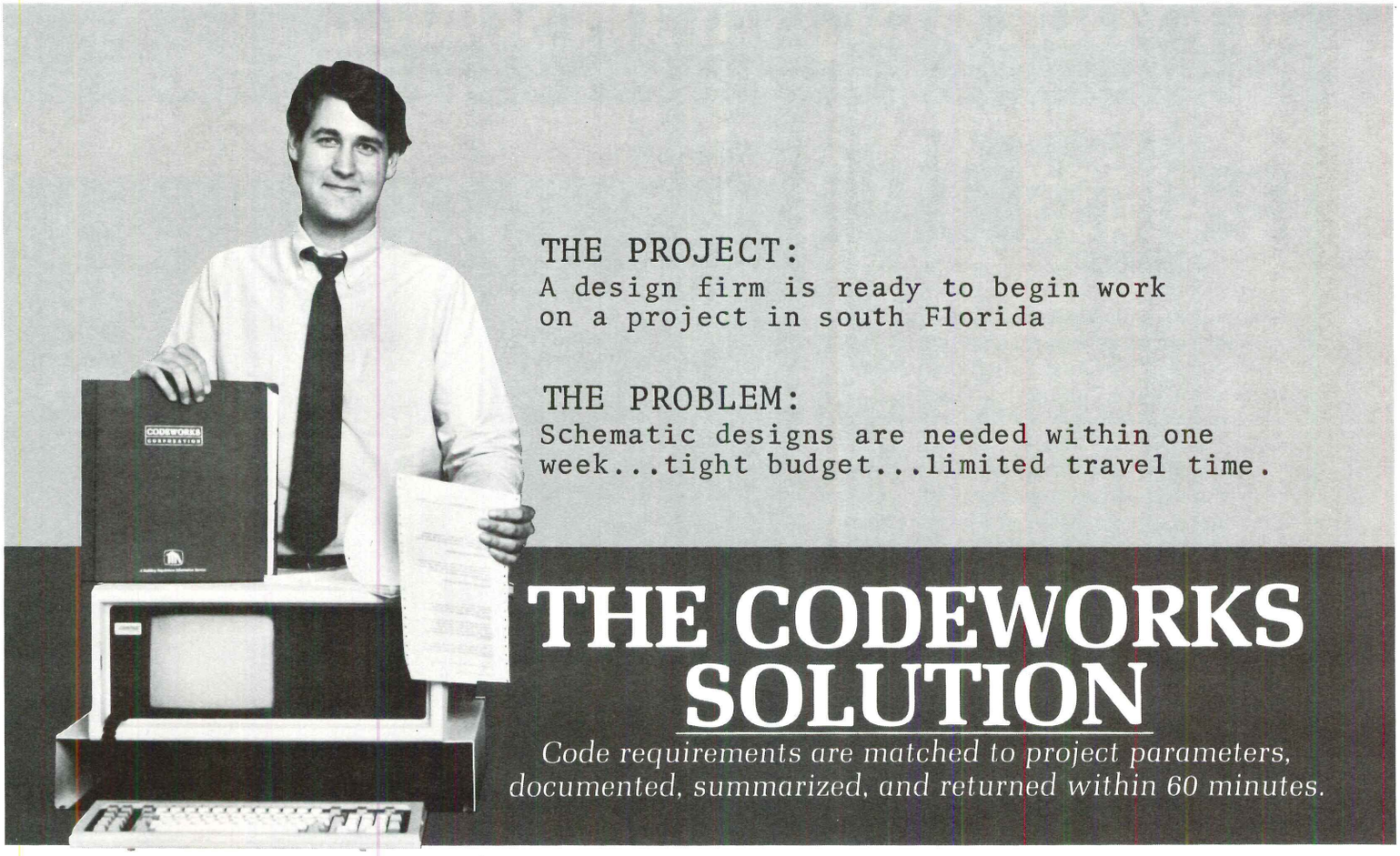
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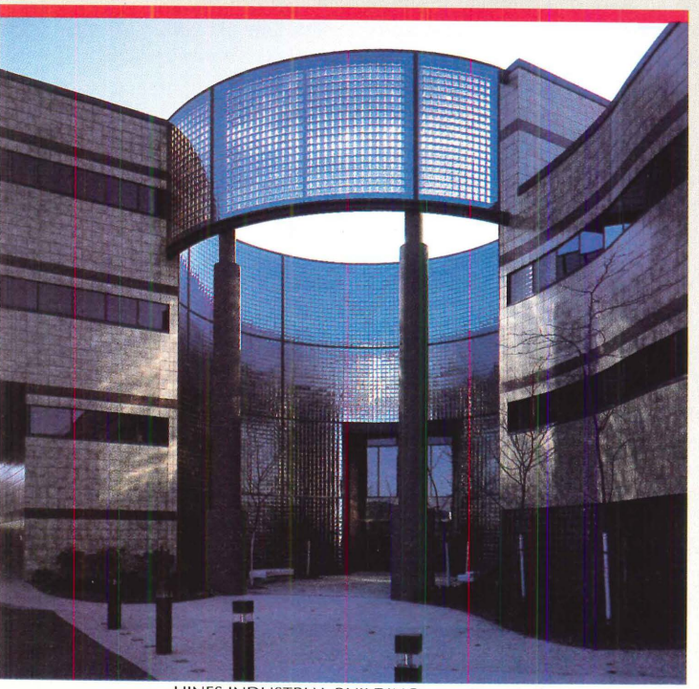
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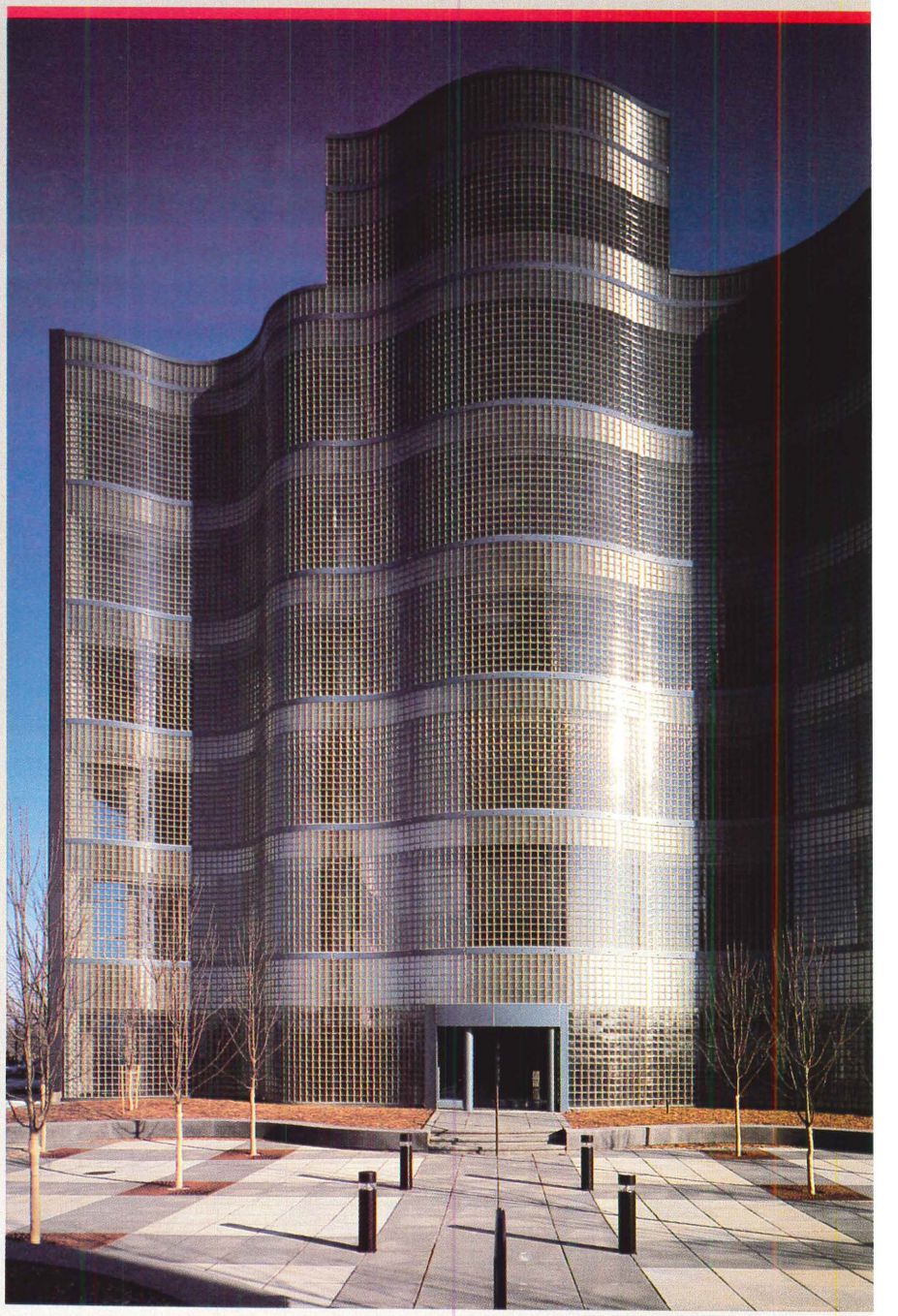
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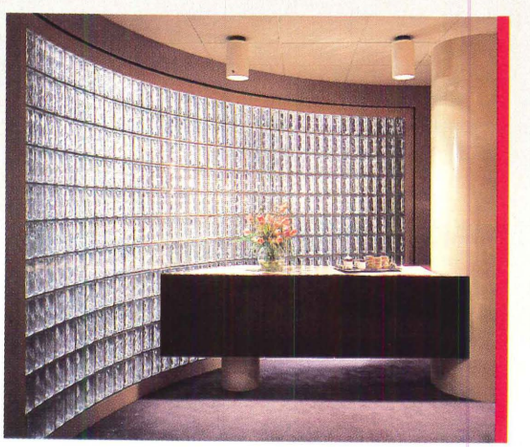
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To be truthful, the Sanyo Split System does come with a few negatives.

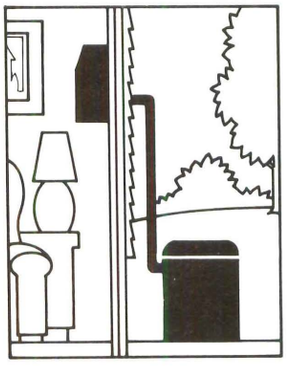
- NO DUCTWORK.
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- NO LOST FLOOR SPACE.
- NO NOISE.



No Problems.

The Sanyo Split System goes where heating and cooling systems have never gone before.

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For specifications and application information write: Thoro System Products, 7800 N.W. 38th Street, Dept. AR-5, Miami, FL 33166.

Thank you for putting your trust in Thoro.



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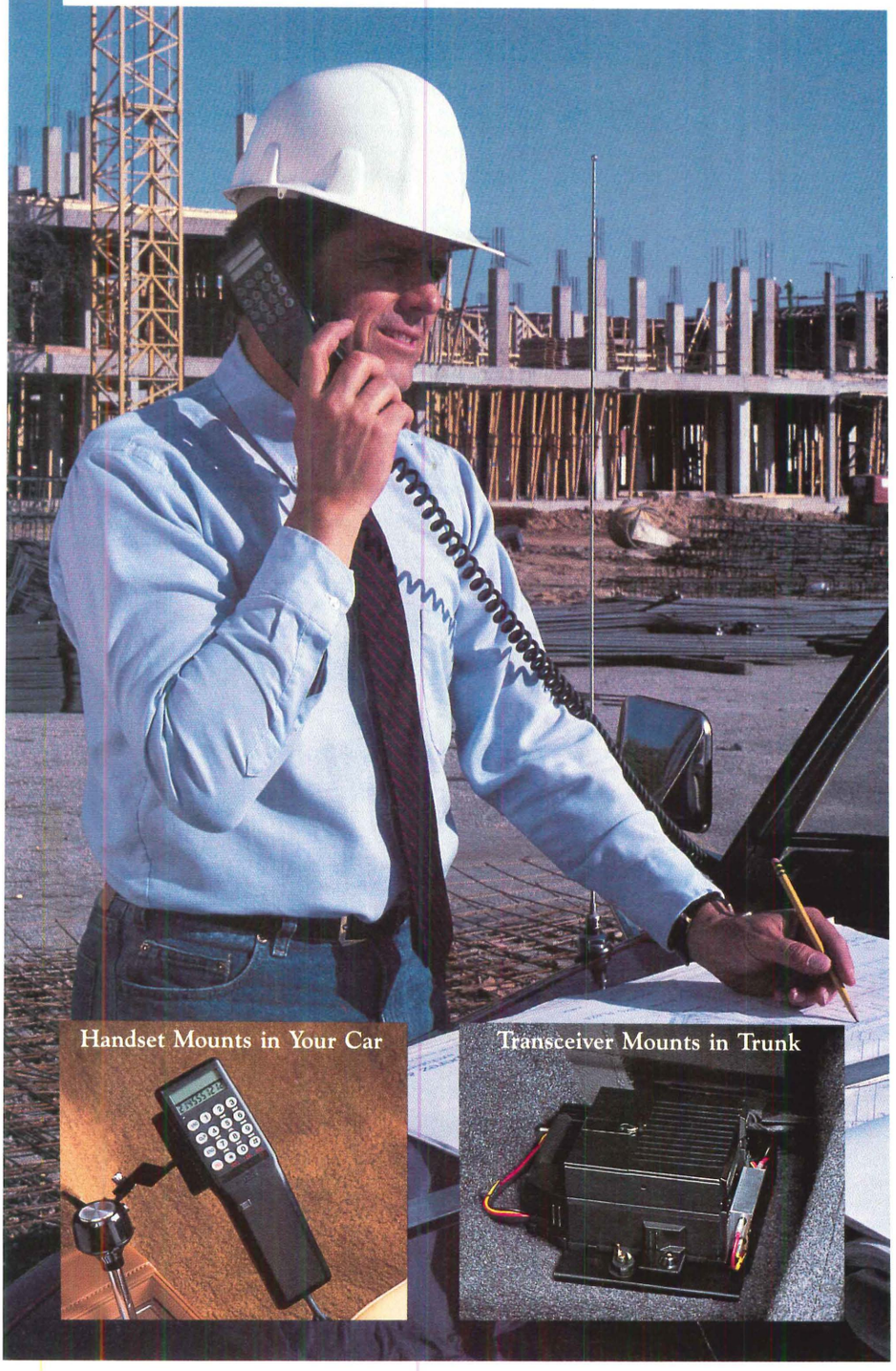
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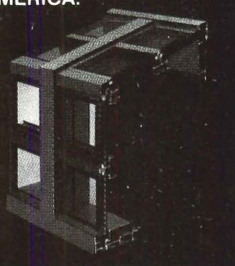
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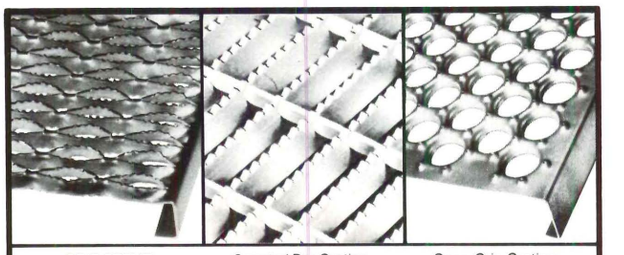
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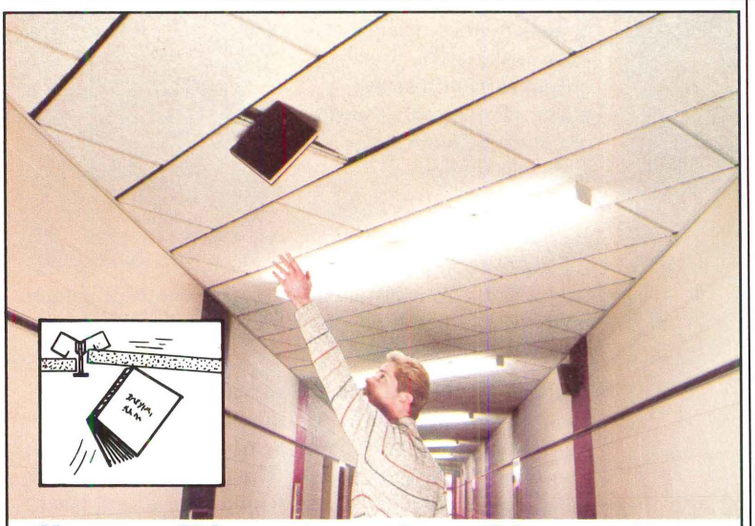
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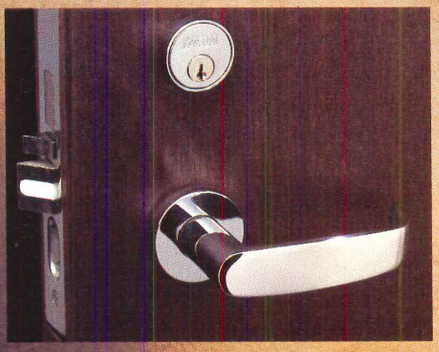
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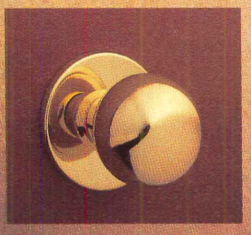
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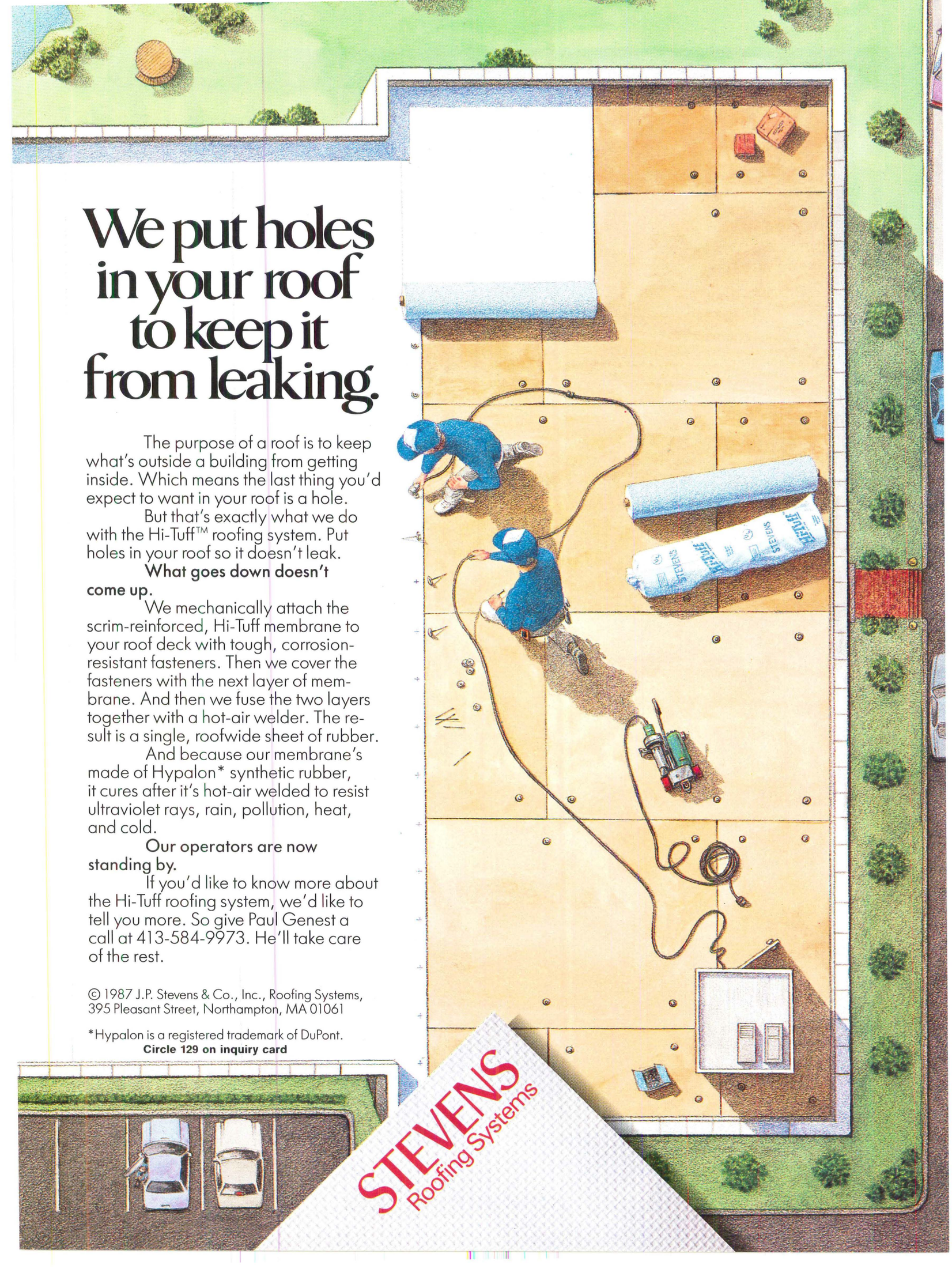
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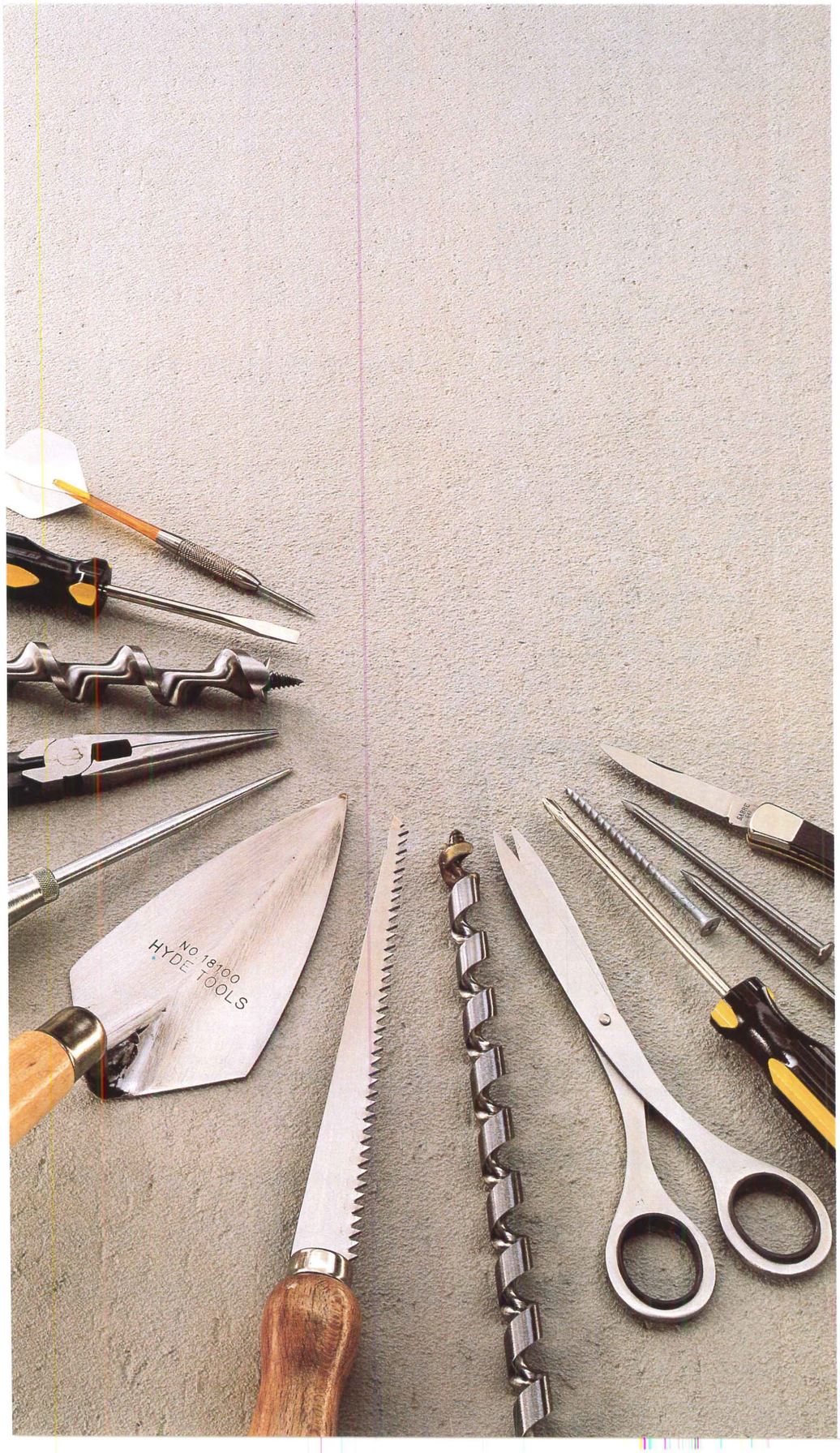


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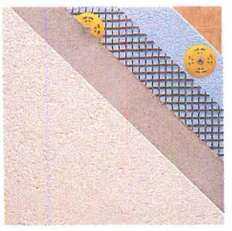
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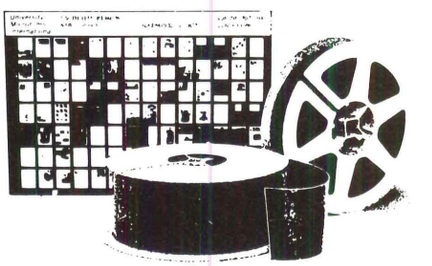
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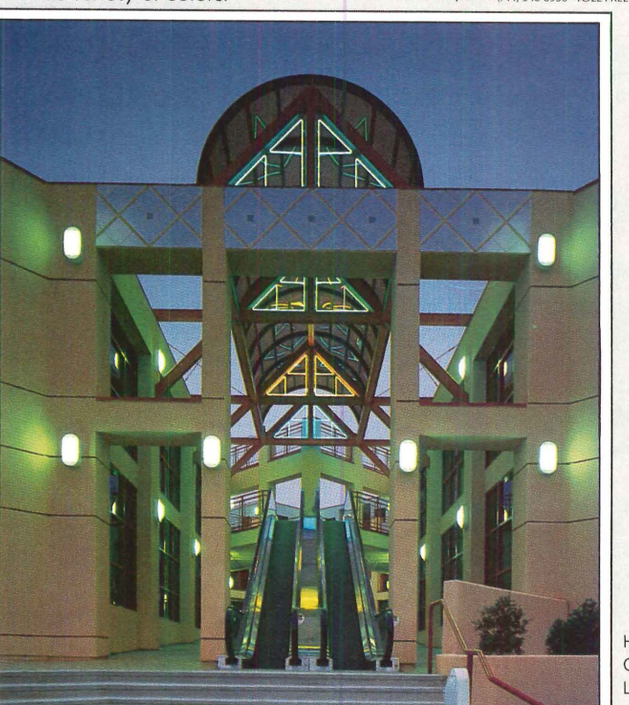
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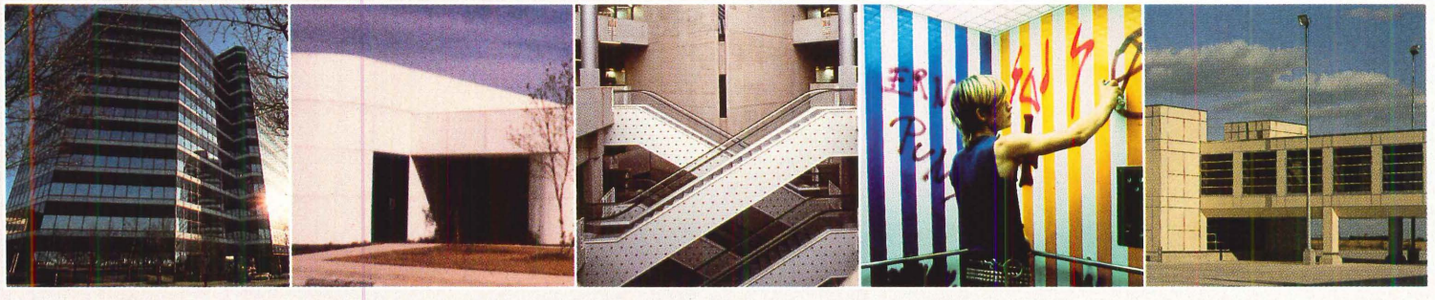
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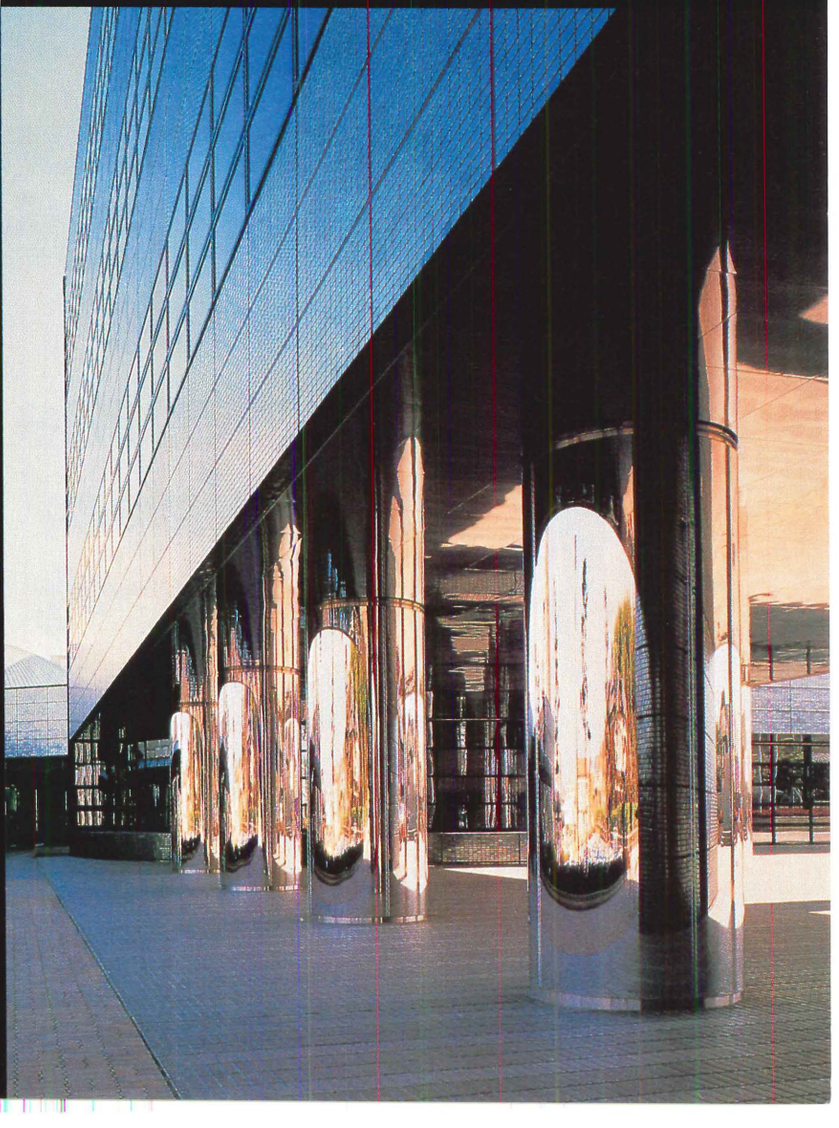
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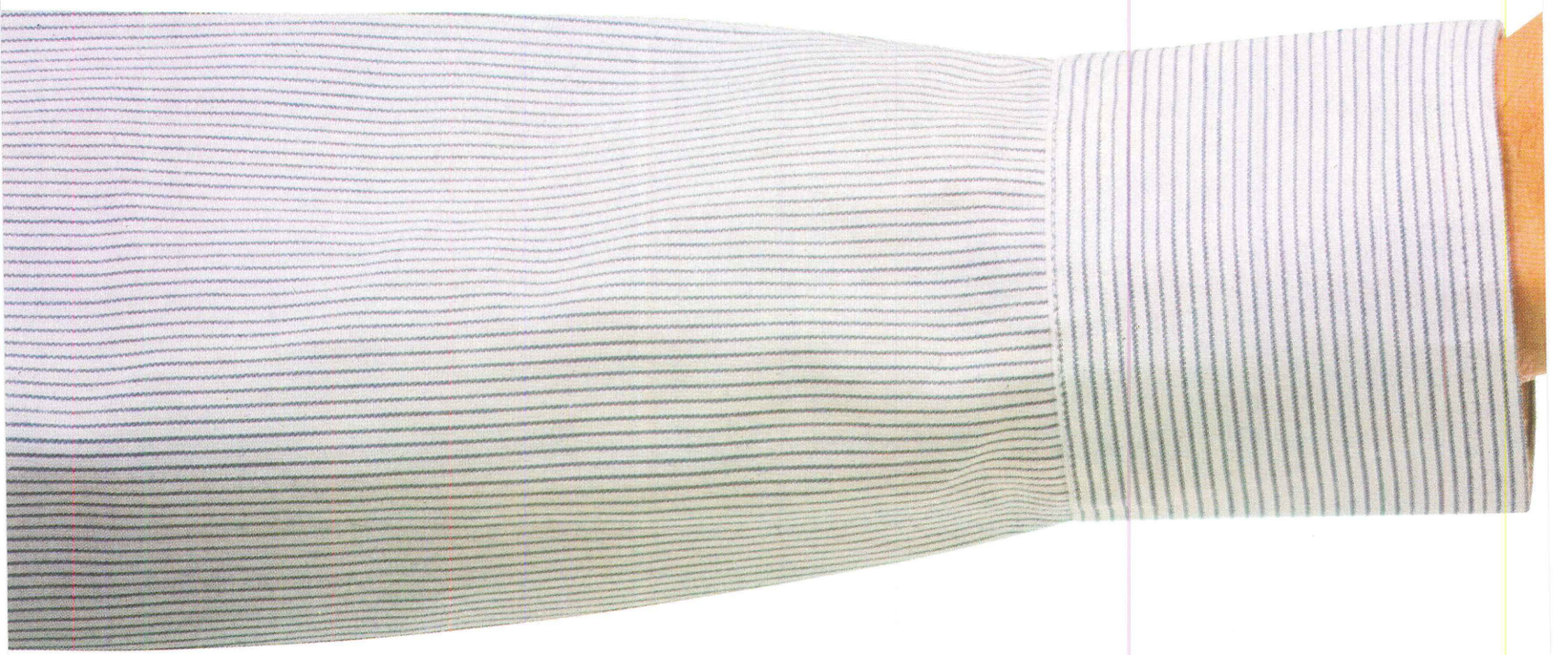
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If you are an experienced designer



PRODUCTS FOR

GENERAL BUILDING & RENOVATION

indexes

Where To Find Manufacturers' Catalogs

firms

products

trade names

data filing format

key words

selection data

1 enclosure

2 roof/floor assemblies & components

3 wall assemblies & components

4 materials–specific use

5 materials– multi-use

6 services

see front cover for complete list of headings

SWEET'S

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GENERAL BUILDING & RENOVATION

1 general data

01101 preservation, restoration & rehabilitation

01850 design office equipment & materials

01970 computer software

2 sitework

02275 geotextiles/geogrids

02276 earth retainage

02280 soil treatment

02488 docks & boat facilities

02510 walk, road & parking paving

02535 athletic surfacing

02610 utility pipe & fittings

02710 subsurface drainage materials

02722 drains & inlets

02725 precast trench drain system

02770 ponds & reservoirs

02800 site improvements

02820 fountains & pools

02830 fences & gates

02840 walk, road & parking appurtenances

02842 bicycle racks/lockers

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02870 site & street furnishings

02875 site & street shelters

02880 outdoor sculpture & ornamental work

02890 footbridges

02960 simulated plants & rocks

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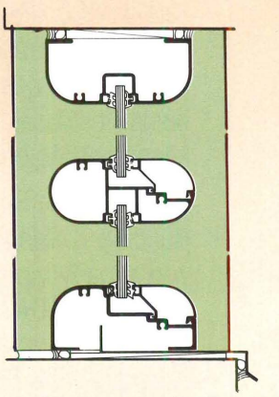
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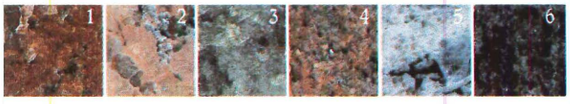
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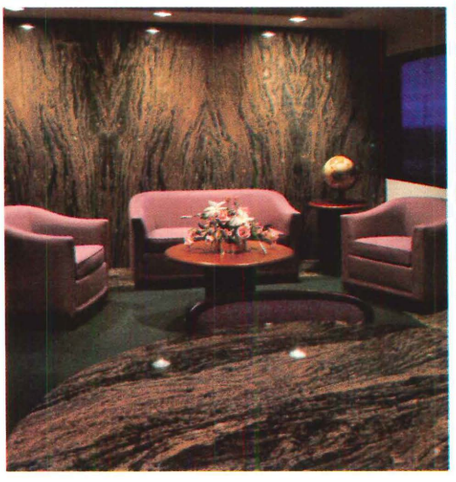
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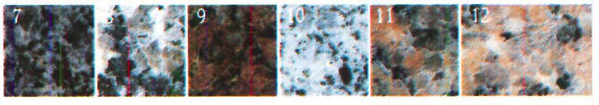
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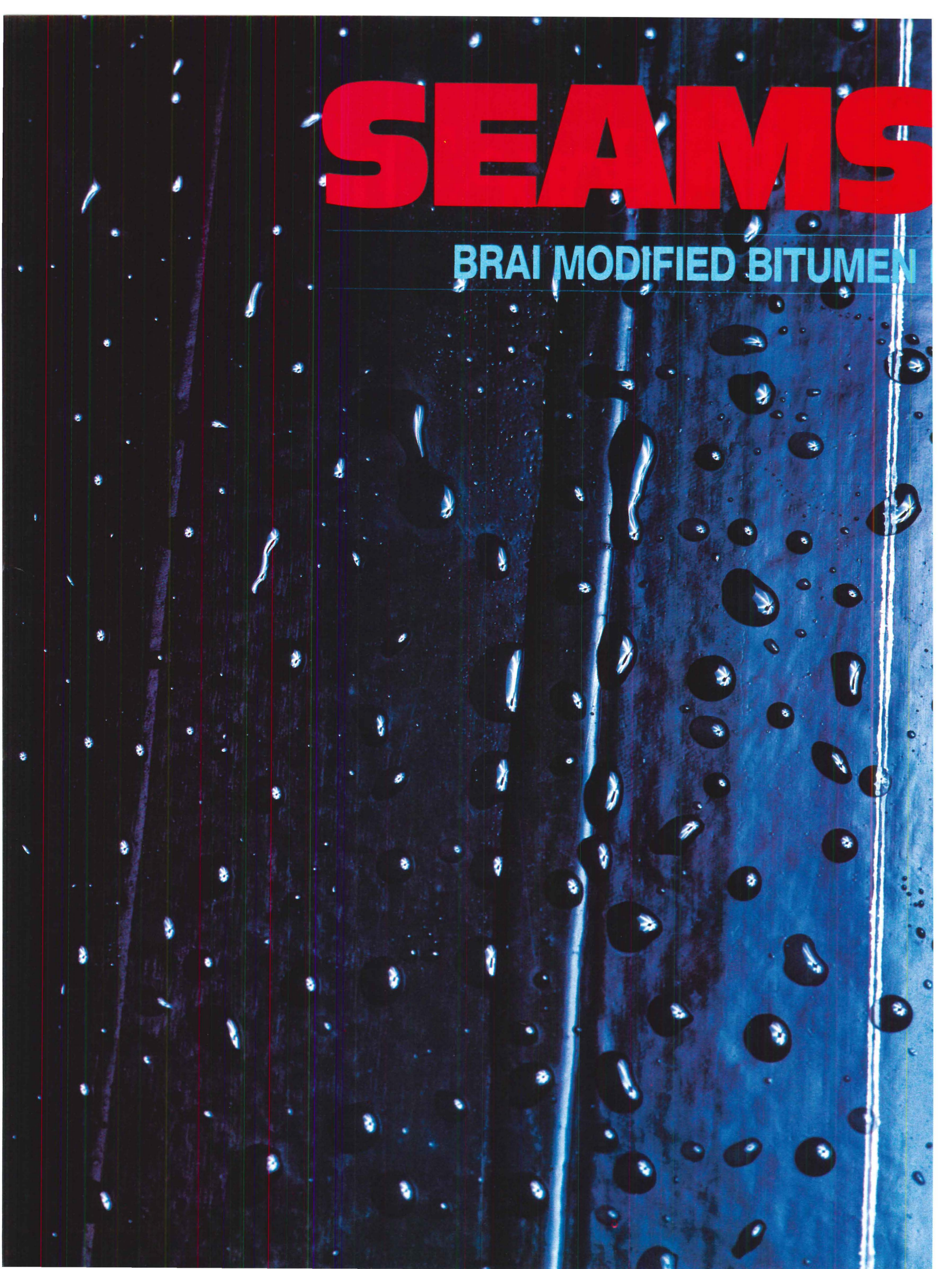
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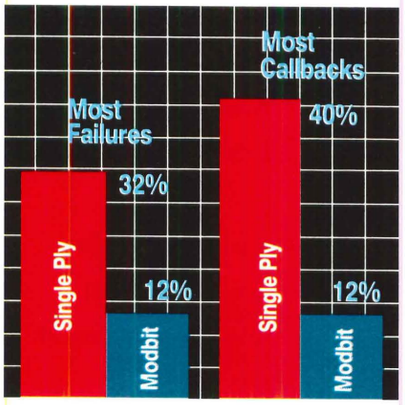
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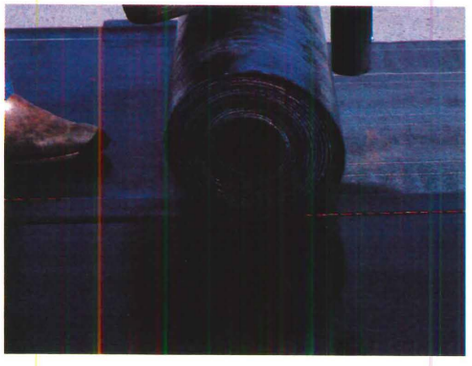
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(E) Engineering & Retrofit
(I) Industrial Construction & Renovation
(L) Homebuilding & Remodeling
(D) Contract Interiors

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Air-Conditioning & Refrigeration Institute, **99**; *70*
(703) 524-8800
AllianceWall Corp., **239**; *135* [G]
(404) 447-5043
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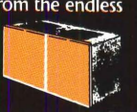
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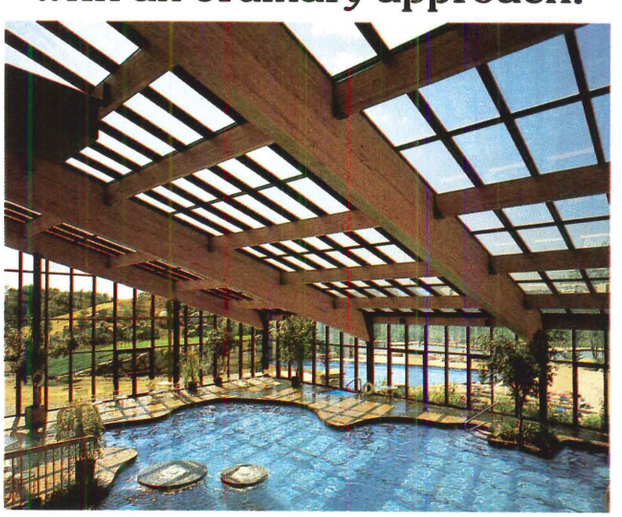
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